PURCHASING

NOVEMBER, 1940.....CONTENTS

	Government Tightens Control of Industry	33
	Coordinating Purchases for National Defense Howard T. Lewis	35
	How A. & M. Karagheusian, Inc. Buys Stuart F. Heinritz	41
	Emergency Contacts With Suppliers	49
	Streamlined Efficiency Features New Office Layout of All-Steel Equip. Co.	50
	How Boston Gear Works Selects Plant Equipment	52
	Commodity Prices in Canada Julian G. Davies	53
Published monthly by	Now is the Time to Relight	55
CONOVER-MAST CORP.	Dean M. Warren	
205 East 42nd Street, New York, N. Y.	Buying for Fire Safety	59
HARVEY CONOVER President and Treasurer	Leonard F. Maar	
B. P. MASTVice-President HARTLEY W. BARCLAYSecretary STUART F. HEINRITZEditor	What Does the Purchasing Agent Want in Trade Paper Advertising? William E. Kerrish	98
A. M. MORSE, Jr. Business Manager	Purchasing Executives Participate in Scrap Conference.	124
Western Manager		
Stanley J. Smith, 333 N. Michigan Ave., Chicago	MONTHLY FEATURES	
R.J	Yours on Request	16
Advertising Representatives:	F.O.B	22
Joseph Mehr, 205 East 42nd St. New York	The Market Place	61
Richard C. Grove, Leader Building Cleveland	Personalities in the News	71
	Among the Associations	74
MEMBER CCA	New Products—Ideas	106
	Index to Advertisers	128

PURCHASING is an independent journal, not the official organ of any association. It is the only publication of national scope devoted exclusively to the interests and problems of the purchasing executive in industry and government. Established 1915 as "The Purchasing Agent." Consolidated with "The Executive Purchaser."

VOLUME IX, NUMBER 5. 15c per copy, \$1.00 per year. Extra postage for Canadian and foreign subscriptions 50c a year. Copyright 1940 by Conover-Mast Corp., in the U.S.A.



"Whenever my ropes must operate over sheaves or drums...
then I want American Cable's TRU-LAY <u>Preformed</u>. It has
greater fatigue resistance; lasts longer; is easier to work."

So say thousands of operators from every industry. Nor do they say and believe that just because we insist upon it in magazine advertisements. They know from actual field and plant experience extending over a period of years.

Join the rapidly increasing ranks of industrial money and time savers by specifying American Cable's TRU-LAY <u>Preformed</u>. *All* American Cable's Wire Ropes made of Improved Plow Steel are identified with the Emerald Strand.

BUY ACCO QUALITY—whether in American Cable Division's Ropes—American Chains (Weed Tire Chains and Welded or Weldless Chains)—Campbell Abrasive Cutting Machines—Page Wire Fence—Page Welding Wire—Reading-Pratt & Cady Valves—Wright Hoists or any other of the 137 ACCO Quality Products.

AMERICAN CABLE DIVISION

WILKES-BARRE, PENNSYLVANIA

District Offices: Atlanta, Chicago, Detroit, Denver, Los Angeles, New York, Philadelphia, Pittsburgh, Houston, San Francisco

Green Signifies Full Speed Ahead for National Preparedness



GOVERNMENT TIGHTENS CONTROL OF INDUSTRY



N October 22nd, President Roosevelt established a Priorities Board, with authority to command industry to produce and deliver defense materials ahead of private or export orders. Authorization for this Board is found in an amendment to the Naval Construction Speed-Up Bill, signed June 28th. No penalties are specified in that bill, but firms declining to comply may now come under the provision of the more recent Selective Service Act, which permits the Government to take over an industry refusing to cooperate. Thus the Board becomes the most

powerful body for governmental control of industry in the peace-time history of the country.

From the very beginning of the defense program, the possibility of a priorities system has been considered. It was a part of the Industrial Mobilization Plan. A section on priorities was set up in the office of the Coordinator of National Defense Purchases. The Army and Navy Munitions Board, at the request of the Defense Advisory Commission, two months ago adopted a system of preference classifications to show the order in which Army and Navy contracts were required, this plan being popularly known as a system of "voluntary priorities."

Purchase Coordinator Donald M. Nelson has been named Priorities Administrator. His associates on the Board are three members of the Defense Advisory Commission—Messrs. Knudsen, Stettinius, and Henderson. Only two months ago the Commission announced that a survey then showed no need to invoke legal authority to enforce priorities on government defense orders. The President's Executive Order now states, "The public interests require that provision be made to insure prompt delivery of materials, articles, equipment and supplies essential to the national defense."

The clear implication in that statement is that industry in the past two months has stalled in defense work, calling for the familiar crack-down technique. Production records do not sustain such a view, which is tenable only under an "on order" philosophy of procurement that regards eight billion dollars' worth of contracts as an over-the-counter transaction. Fortunately the administration of the new power is in the hands of men who know production problems, and Administrator Nelson's temperate statement on undertaking the new responsibility is reassuring. Meanwhile, amid protestations of peace and declarations of emergency, industrial production and purchasing are brought one step nearer to regimentation from Washington.

Stuart & Newitz

Buy Steel



with
LABORATORY
CERTAINTY
-at Ryerson

HEAT ANALYSIS AND
CARBURIZING DATA SHEET

EVERY shipment of alloy steel is accompanied by accurate data based on laboratory tests, covering exact chemical and physical properties, grain size, cleanliness rating and hardening characteristics. With the Ryerson data sheet before you, you know what steel you are getting, you secure best heat treatment results and you save time because you do not have to test.

Ryerson stocks also include a wide range of stainless, heat- and corrosion-resisting steels, sheets and tubing—all closely controlled as to chemical content. Many highly specialized steel requirements can be supplied on a moment's notice!

Ryerson Steel-Service is geared particularly to the needs of defense industries. All

Ryerson products are painstakingly selected for their uniform high quality. They are carefully warehoused, accurately cut to your specifications, and shipped on the dot from ten convenient stocks of over 10,000 sizes, kinds and shapes.

Submit your next steel problem to the nearest Ryerson plant. If you haven't the 1940-41 Ryerson stock list and data book, send for it today. It will quickly become your guide to quality steel and fast steel service,

Joseph T. Ryerson & Son, Inc., Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.



RYERSON

JOSEPH T. RYERSON & SON.

COORDINATING

PURCHASES FOR NATIONAL DEFENSE

An effective organization has been set up in Washington to direct the Nation's No. 1 procurement problem.

By HOWARD T. LEWIS

Assistant to the Coordinator of National Defense Purchases

EW businessmen have a clear understanding of the organizations responsible for the expenditure of the billions of dollars appropriated for national defense. Still fewer realize the significance of what has been transpiring in Washington in connection with this program in so far as Federal purchasing policy and procedure are concerned. The following discussion is intended to describe the general outline of the purchasing organization existing for the Preparedness Pro-



Donald M. Nelson.
Coordinator of National Defense Purchases.



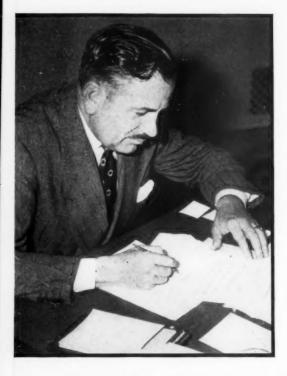
Howard T. Lewis, Assistant to Coordinator.

gram and to indicate some of its major policies. No attempt will be made to discuss the individual problems which confront those responsible for the administration of this program.

Legislative Authorization

To visualize the present situation in its proper perspective, it is well to recall a certain amount of background. The Army Appropriation Act of August, 1916 (39 Stat. 649), created a Council of National Defense, consisting of six members of the Cabinet. The duties of this Council were related largely to the type of problem that we characterize today by the broad

NOVEMBER, 1940



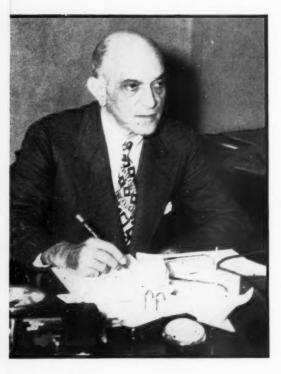
Frank M. Folsom, Assistant Coordinator.

term "industrial mobilization." Realizing that unaided the Council might prove ineffectual, the same Act provided for an Advisory Commission to the Council. The membership and duties of this Commission were set forth in the following words:

The Council of National Defense shall nominate to the President . . . an advisory commission, consisting of not more than seven persons, each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource, or be otherwise specially qualified, in the opinion of the council, for the performance of the duties hereinafter provided.

The Act further provided that:

The Council of National Defense . . . shall provide for the work of the advisory commission to the end that the special knowledge of such commission may be developed by suitable



Col. Robert A.
Roos, Assistant
Coordinator.

As this issue goes to press, Douglas C. Mac-Keachie, Purchasing Director of the Great Atlantic & Pacific Tea Co., Boston, is appointed to succeed Col. Roos, who returns to military duty in the mobilization of the 9th Corps Area.

investigation, research, and inquiry and made available in conference and report for the use of the council; and the council may organize subordinate bodies for its assistance in special investigations, either by the employment of experts or by the creation of committees of specially qualified persons to serve without compensation, but to direct the investigations of experts so employed.

In the course of time the Advisory Commission evolved into the War Industries Board. With the coming of peace, of course, the whole organization disharded

On May 29, 1940, President Roosevelt, under the authority of the Army Appropriation Act of 1916, revived both the Council and the Advisory Commission. The Council, although reestablished technically, has never become active, the President apparently feeling that in view of the experience of the previous World War, a civilian organization devoting its entire attention to the problems of industrial mobilization could deal more effectively with them.

Advisers Become Executives

After a little thought, two things become apparent. First, since the Council of National Defense is itself inoperative, the Advisory Commission ceases to be purely advisory and becomes, in fact, a functioning body. Second, the Advisory Commission has no chairman, except in so far as the President himself serves in that capacity. Hence, far from functioning as a body subsidiary to the Council, the Commission reports directly to and is supervised only by the President. Almost from the day of the resurrection of the Advisory Commission, Mr. Roosevelt has been urged to appoint a chairman, but he has persistently refused to do so.

At the moment, the personnel of the Commission need not concern us. The significant fact is that its seven members represent as many different interests in the industrial preparedness program. William S. Knudsen is responsible for the production of finished items. Edward R. Stettinius, Jr., is concerned with the supply of raw materials. Leon Henderson watches prices. Sidney Hillman represents labor. Harriet Elliott represents the consumer; Chester Davis, agriculture; and Ralph Budd, transportation.

Under such a setup it is evident that, especially without a chairman, a serious problem would inevitably arise in trying to get seven different points of view to converge on any one procurement problem. A solution to this problem had to be found; otherwise, once the Commission really began to function, internal strain and stress, which might well prove serious, would certainly develop. The problem of securing this desired cooperation was complicated further by the old resentment on the part of the military toward alleged civilian interference.

It should be observed here that the Advisory Commission itself cannot actually place a single contract. The responsibility for the procurement of military supplies is placed by statute in the hands of the War and Navy Departments. Under authority conferred by Presidential Directive, however, the Commission can supervise the placing of contracts.² In order to effect the actual procurement of military supplies on the basis

¹ This resentment, where it exists, is based largely upon a misconception of the attitude of the Commission and usually disappears with proper handling of personnel relations. Essentially, it is of the same nature as the opposition in private business of some production executives toward the assumption of any real responsibility by the purchasing officer.

² It should be recalled that the President is also Commander-in-Chief of the Army and Navy.

of the responsible advice given by the members of the Advisory Commission, it is evident that some office had to be created through which these divergent and frequently conflicting opinions could be expressed and merged.

Coordinator is Appointed

To solve this problem, a new office, that of the Coordinator of National Defense Purchases, was created. No provision for such an office existed in the law and although the necessary legislation might have been forthcoming, the Emergency demanded the avoidance of the inevitable delay incident to such a procedure. Consequently, the Office was created by an Executive Order, dated June 27, 1940, which read:

Pursuant to authority vested in it by section 2 of the Act of August 29, 1916 (39 Stat. 649), the Council of National Defense, with the approval of the President, hereby established as a subordinate body to the Council an office to be known as the Office for Coordination of National Defense Purchases, at the head of which there shall be a Coordinator of National Defense Purchases (hereinafter referred to as the Coordinator). The Coordinator shall serve as such without compensation but shall be entitled to actual and necessary transportation, subsistence, and other expenses incidental to the performance of his duties.

The Office for Coordination of National Defense shall, in cooperation with the Advisory Commission:

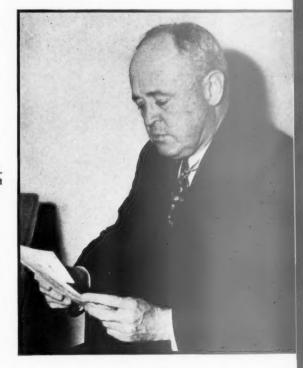
- (1) establish and maintain liaison between the Advisory Commission, the several departments and establishments of the Government and with such other agencies, public or private, as the Coordinator may deem necessary or desirable to insure proper coordination of, and economy and efficiency in, purchases by the Government of supplies, equipment, munitions, and other material requirements essential to the national defense;
- (2) determine the most economical and effective methods of purchase of repetitive items common to several agencies and to assign the purchase function to the agency or agencies best qualified to perform it, provided that the War and Navy Departments shall have authority for making purchases necessary for the national defense, subject to such coordination as may be required to establish priorities;
- (3) collect, compile and keep current statistics on purchases made by Federal agencies;
- (4) coordinate the research in procurement specifications and standardization now conducted by the different Federal agencies;
- (5) determine and keep current combined immediate material requirements of all Federal agencies, and estimate future requirements so as to facilitate purchases and to cushion the impact of such orders on the National economy;
- (6) review existing laws and recommend to the President such new legislation and simplification of existing legislation to the granting of priority to orders for material essential to the national defense over deliveries for private account or for export.

Donald M. Nelson is hereby appointed Coordinator of National Defense Purchases.

This executive order needs to be interpreted in the light of the problem with which it was trying to deal. When so viewed, it soon becomes apparent that since the Council of National Defense is inoperative, the Advisory Commission lacks a chairman, and the office of Coordinator of National Defense Purchases was created by an Executive Order rather than by statute, any attempt to diagram the relationship between the four immediately interested parties (to include the President and the Army/Navy as well as the Council and the Commission) from an analysis merely of the wording of the statutes and the Order would lead to a real misunderstanding of the true situation. In point of fact,

the Coordinator is considered a member of a truly functioning Commission. Indeed, it is quite within the realm of possibility that he may become the most important single member of it.

The appointment of Mr. Donald M. Nelson to the Office of Coordinator of National Defense Purchases was a most fortunate one. Possessed of infinite patience, great tact, wide administrative experience both in private industry and in governmental work, broad vision, and a deep conviction in the necessity for preparedness, Mr. Nelson was an excellent choice. Upon being appointed, he proceeded along certain very definite lines. A staff was built up only as the need developed. The existing procurement policies and procedures were disturbed only when it became clear that changes were essential in the interests of efficiency. Progress was made on the basis of persuasion and cooperation, and not by edict. So skillfully has Mr. Nel-



Col. Hiram S. Brown, Assistant to Coordinator.

son administered his work, that his tremendous influence in the whole national defense program is just becoming fully apparent. Two examples will give a much clearer understanding of the importance of the Coordinator's Office.

Policy on Defense Contracts

The first example is to be found in the more or less well-known statement by the Advisory Commission of its policy governing the letting of defense contracts. This statement orginated in Mr. Nelson's office, was presented to the Commission with his approval and, in fact, was most ably supported by him when it was before the Commission. The result was that the latter unanimously approved of the statement. It was transmitted to the President who, because of the importance he attached to it, made the matter the text of a special message to Congress. Purchasing men generally will recognize the essentials of sound procurement in the document. Because of its significance, the statement is reproduced here.

The essence of the Preparedness Program is the getting of



Charles I.
Gragg, Assistant
to Coordinator.

an adequate supply of materials of the proper quality in the shortest space of time possible. Considerations of price alone are highly important, but in the Emergency are not governing.

1. Speed of delivery of all items on the Defense Program is essential. This means:

- (a) That orders should be placed in such a manner as to insure the most efficient use of each particular facility from the point of view of the program as a whole;
- (b) That proper consideration should be given to contributory industries, such as the machine tool industry, to avoid creating underlying bottlenecks;
- (c) That once delivery dates are fixed, assurance be given that they will be met by the supplier.
- 2. Proper quality is also of prime importance. It is therefore necessary to determine first of all whether or not the supplier can meet the quality requirements, as specified. There should be a willingness on the part of both the Army and Navy, on the one hand, and of the supplier on the other, to adjust specifications on a cooperative basis in order that such specifications may come as near as possible to meeting commercial standards while at the same time fulfilling the military requirements.
- 3. Price, while not the sole consideration, is of outstanding significance, and every effort must be made to secure a fair price. This must take recognition, among other things, of determination of proper cost factors.
- 4. The impact of the defense program upon the consumers must be recognized. This relates to such factors as:
 - (a) Due regard to the necessity of protecting civilian needs and morale;
 - (b) Proper health and housing conditions among employees;
 - (c) Consideration to possible off-season production in order to dovetail the military program into production for civilian requirements. Off-season production should also lead to lower overhead and consequently to lower prices for both the consumers and the Government.
- 5. Adequate consideration must be given to labor. This means compliance with the principles on this subject stated by the Commission in its release of August 31st, a copy of which is attached hereto.¹
- 6. Undue geographic concentration of orders should be avoided, both as to procurement districts and as to industrial

sections within any such procurement district. Reasons for such decentralization relate to factors of military strategy, as well as avoiding congestion that will slow down production.

- 7. Financial responsibility of the supplier should be examined. Ability to post a bond does not necessarily dispose of this problem. The probability should exist that the supplier will be able to continue in business, at least long enough to complete his contract satisfactorily. Further, an ability to finance himself through private sources should take preference over necessity for securing government aid.
- 8. The avoidance of congestion of transportation facilities should be sought. The same applies to warehousing facilities.
- 9. Due consideration should be given to the adequacy of power facilities, particularly where furnished by public utilities.
- 10. A general preference should be given to firms having experience with so-called educational orders.
- 11. The moral responsibility of the supplier is important, and in some respects, fundamental. There should be evidence of honest and sincere desire to cooperate with the Army and Navy in producing what is called for, and on time, without profiteering; to assume some risk himself rather than attempting to shift all such risks to the Government; and to furnish a correct statement as to his capacity and his experience. The supplier's general standing and reputation among reputable business men (as distinct from his financial rating) is one index of such qualifications.
- 12. The Commission recognizes that competitive bidding is the better procedure in certain types of industry and circumstances. However, it is often impossible to make sure that the principles outlined above are followed when contracts are placed on the basis of price alone and are let to the lowest bidder. Therefore, in cases where competitive bidding will not fulfill the above stated needs of national defense, the Commission recommends that the use of the negotiated contract be authorized where necessary in order that these objectives be obtained in making defense purchases.

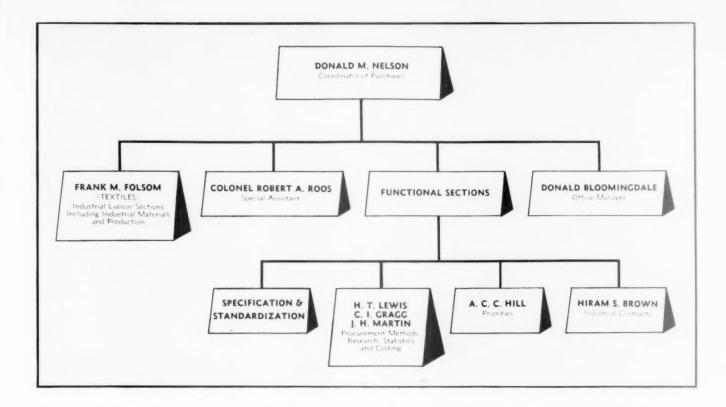
Administering Priorities

A second example of the influence of the Coordinator's Office is somewhat more specific. A glance at the

1 Not reproduced here.



Donald Bloomingdale, Office Manager.



duties assigned to the Office of the Coordinator will make it clear that Executive Order confers upon it the potential authority not only to control procurement in connection with the Emergency but all Federal procurement. Nothing has as yet been done, however, to disturb the existing peace-time purchasing activities of the non-military agencies.

The situation with reference to purchases for the Army and Navy, however, is quite different. Priority decisions, which are held by some as the crux of the whole military procurement problem, although not at present numerous, are passing through the Coordinator's Office. In the placing of contracts by the Quartermaster Corps, valuable assistance has been given in such matters as specifications and the timing of deliveries. Real progress is being made on the whole program of so-called "negotiated contracts" through the cooperation of Mr. Nelson and Mr. Henderson with the various Supply Arms and Services.

Placing the Responsibility

But still another step has been taken, the significance of which must be recognized by all. The following recommendation was adopted by the Commission at a meeting held on September 13, 1940:

The Second Revenue Act of 1940 requires the Advisory Commission to the Council of National Defense to (1) certify "as necessary in the interest of national defense during the emergency period" all contracts for new facilities which are entitled to make use of the amortization provisions of the law; and (2) certify "that the contract contains provisions adequately protecting the public interest with reference to the future use and disposition of the facility."

An additional certification by the military establishment concerned, either the Secretary of War or the Secretary of the Navy, is required.

This law also provides "the terms and conditions of such contracts with reference to payment or reimbursement of the

cost of such facilities and the protection of the Government's interest therein shall be made available to the public."

These certification and publicity requirements create a mandatory administrative responsibility for the Commission in the handling of all such contracts,—a responsibility which the Commission must be prepared to meet immediately because contracts already placed will be subject to these provisions.

To do so satisfactorily and efficiently it will be necessary to centralize the handling of these certificates and the publication of terms and conditions.

No member of the Commission should carry the entire responsibility and the accompanying burden of details but each Commissioner should advise and cooperate so all needed information will be readily available.

The procedure should also give each member of the Commission an opportunity to question the granting of a certificate by furnishing a list of the applicants to each Commissioner regularly and at a sufficient time prior to their issuance.

It is recommended that this responsibility be centralized in the office of the Coordinator of Purchases and that Mr. Nelson forewith establish suitable procedure and organization to handle it.

Moreover, the Commission should immediately announce this delegation of responsibility to Mr. Nelson so that applications for both types of certificates will be directed to him.

Reduced to a sentence, this means that all contracts involving the excess-profit and amortization provisions under the Second Revenue Act of 1940 must be certified as being both necessary and in the public interest and that the members of the Commission must so express themselves through the Office of the Coordinator of National Defense Purchases rather than independently. It follows that the Coordinator must, when necessary, harmonize the divergent points of view and exercise independent judgment on controversial issues. It would, of course, be entirely possible to reduce this act of certification to the level of routine clerical op-

eration. As long as Mr. Nelson remains in his present post, such a condition is well-nigh inconceivable.

The procedure by which members of the Advisory Commission, either independently or as a group, will express themselves on such negotiated contracts as fall under this Act is now being formulated. A variety of possibilities will suggest themselves to the reader. One method would be to gather together in the Coordinator's office all the pertinent information, such as the application of the supplier, any additional factual report from the procuring officer, and the recommendation of the Army and/or Navy Department. On the basis of these and any other data at his disposal, the Coordinator's office could then formulate an independent judgment as to the justification for the application. This decision would then be transmitted to a committee of the Advisory Commission, consisting of one member from each of the seven offices. This committee, holding regular meetings perhaps twice a week, could then approve or disapprove of the Coordinator's recommendation. If approved, a certificate would then be issued by the Secretary of the Commission on its behalf. If disapproved, the application would be returned.

It is, however, highly important that the Coordinator's office maintain the closest liaison between the Commission and the procurement agencies, not merely after a contract has been drafted in final form, but throughout the entire negotiations. In point of fact, to wait until the contract is actually completed, and has been passed upon by everyone in the War/Navy Departments, before submitting the matter to the Coordinator is likely to mean that it comes to the latter too late to play any really effective part in the transaction.

Obviously, many unsolved questions still confront the coordinator. One such relates to the purchase of strictly military items (as distinct from plant or equipment) through the use of so-called negotiated contracts instead of on the usual bid basis. There is also the underlying problem in such cases of how best to secure and render effective the advice of the various members of the Commission. In view of the action taken with respect to plant contracts, it is difficult to see how any other solution can be reached than to centralize responsibility in the Coordinator's Office. At the time of writing, however, such action has not been taken.

A suggested method for handling this phase of the problem of negotiated contract procedure for military items, however, has been under consideration. Essentially, it is as follows:

1. Final responsibility for the negotiated contract legally does and properly should rest with the responsible procurement Army or Navy officer. No procedure should be developed which will interfere with this responsibility.

2. Each of the various offices of the Advisory Commission should have an opportunity, in advance of the letting of a proposed contract, to express an opinion with reference thereto. This can be done by notifying a properly designated person within each of these offices of the fact that negotia-Proposals in which the tions are about to be instituted. probable size of the order exceeds some specified amount should be thus reported, the exact amount being determined by agreement with the procuring branch. Proposed contracts involving less than this amount may be reported on the initiative of the procuring officer. Notice of the proposed negotiation should be sent to the Office of the Co-This office should immediately, ordinator of Purchases. upon the receipt thereof, pass these data on to the other offices of the Advisory Commission.

3. Within the shortest possible time acceptable to the Commission, each of these offices should report back to the Coordinator's office any comments it sees fit to make, or in-

terest which it may have, in the proposal. Failure of any office to report within this time limit will be understood to indicate a lack of any particular concern with that particular contract.

4. The comments thus obtained should upon receipt by the Coordinator's Office be passed on immediately to the technical commodity expert within the Office of the Coordinator most familiar with the item in question or in the absence of such a person, to a person selected by the Coordinator from the staff of the Advisory Commission to represent him. This person should then study the comments and proceed to discuss them with the Army or Naval officer responsible for the proposal. This technical representative of the Coordinator's Office should continue to sit with the procuring officer and the supplier as long as it appears he can be helpful, both offering advice and suggestions to the latter, and likewise acting as liaison officer between the Commission and the procurement office.

5. It is recommended that the Coordinator's technical commodity expert be expected to keep a full record of the negotiations. It may be desirable to maintain a duplicate of this record in the office of the procuring branch. It may under some circumstances be deemed advisable for the Coordinator's representative, by initialing or in some other manner, indicate his approval of the contract finally agreed upon. Such record would be designed to provide added protection to the procuring officer against subsequent criticism.

6. For the purpose of keeping still more closely informed as to the progress of contract negotiations, regular meetings of representatives of the various offices of the Advisory Commission should be held, such meetings to be presided over by the representatives of the Coordinator's Office.

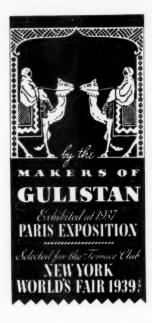
7. Adequate provision must be made through the preparation of a Manual, through visits from the Coordinator's Office to various field procurement districts, and by various other means, to educate the district procurement officers in the policy, procedure, and problems of the War Department and of the Advisory Commission policy in each of the various District Procurement Offices.

8. A reasonable check should be continually maintained by the Coordinator's Office, after negotiated contracts have actually been let, as to the effects of such contracts on prices, labor, load, etc., both within the areas where such contracts are in force and among the companies to which they have been let. This follow-up is deemed important because of the information it should provide as a guide in the negotiation of future contracts.

Over and above these problems, however, are many other unanswered questions. Thus, what will be the effect of these developments in Defense procurement policy and procedure on the ordinary peace-time Federal procurement? Again, recalling that the present Coordinator as well as the various members of the Commission are serving without compensation, what will be the organization for naval and military procurement and how wisely will it be administered after the Emergency has passed, and the present officials have returned once more to their regular peace-time duties? The answers to these questions and to many another cannot be foreseen at this time.

A final word may be in order. In spite of all the unsolved questions confronting the Army, the Navy, and the Defense Commission—and they are many and perplexing—one fact must impress itself on anyone familiar with both the present situation and that of the first World War. That fact is that the past efforts of the two services in planning for industrial mobilization, efforts often put forth in the face of little encouragement, inadequate support, and almost no publicity, have not been in vain. A very substantial number of farseeing and capable officers in both the Army and the Navy have at least learned how to plan, and in the learning have produced many tangible results, the value of which it is far too easy to overlook.

¹ September 25, 1940.



HOW

A. & M. KARAGHEUSIAN, INC.

BUYS

By STUART F. HEINRITZ

PURCHASING FOR THE MAKERS OF

GULISTAN

RUGS and CARPETING

THE development of centralized purchasing at A. & M. Karagheusian, Inc., reflects the changing character of an ancient craft attuned to the modern business tempo. When the firm was established in New York City in 1898, the business was relatively simple. Fine handmade Oriental rugs were collected from Iran, Syria, Turkey, Armenia and China, imported to the New York showrooms, where the customers came to examine the wares and to buy. That importing business is still carried on successfully, and on a large scale. But today it is only one part of a much broader program.

The present organization is engaged in both production and distribution, and is literally world wide in the scope of its operations. Through representatives at Kirman, Sultanabad and Hamadan, the company actively supervises hand rug manufacture in Iran, advancing money to the weavers (who may work to individual or traditional patterns, or to designs furnished by the company), aiding them in wool selections, blending, and dye manufacture, and taking their output for world distribution. At Tientsin, a million dollar weaving plant produces Chinese rugs. In 1906 a weaving plant was opened at Freehold, N. J., where modern machine production methods were applied to the manufacture of moderate-priced rugs in a variety of designs, embodying the distinguishing characteristics of





R. F. BANKER Purchasing Agent



E. B. BACHMAN Assistant Purchasing Agent

one-piece weaving and patterns showing through the rug back. This undertaking, astutely keyed to the demand of a large domestic market, and expanded to the point where carpeting up to 18 feet in width can be produced in a single piece, was supplemented in 1924 by the opening of a spinning and dyeing plant at Roselle Park, N. J., so that the company now controls the complete manufacturing operation from raw wool to the finished product.

This development has permitted the maintenance of uniform high quality along with the economies of large scale production, a combination that has made the Karagheusian products available for thousands of American homes and has resulted in their selection for such representative installations as the new United States Supreme Court Building in Washington, the Rockefeller Center Music Hall and Theater in New York City, and the luxurious new liner "America," to mention only a few of the outstanding examples.

The organization today ranks as one of the four largest manufacturers of rugs and carpets in the United States. Meanwhile the marketing organization has likewise expanded to include sixteen branch offices in principal cities throughout the country, and approx-

imately fifty wholesale dealer outlets—a far cry from the single showroom which represented the company's activities at the turn of the century.

Scope of the Purchasing Department

Raw wool is, of course, the basic raw material used in the company's manufacturing operations, and the requirements of this material run into several millions of dollars annually. Supplies come from China, Mesopotamia, Syria and the Argentine, each type selected with the utmost care for its particular characteristics, which in turn determine the characteristics of the product. Procurement of this item is recognized as a job for a specialist, expert in his knowledge of wool quality and concentrating on that market. Consequently this phase of buying has been retained under the direct supervision of the secretary of the company, apart from the activities of the purchasing department proper.

It is not likely, nor desirable, that this feature of purchasing will be altered, for centralization in this respect would serve no useful purpose. The situation is, in fact, quite generally characteristic of industries where a single natural commodity such as wool, silk, rubber or hides, is the major material making up the

manufactured product.

Centralized purchasing, which now embraces practically all other materials used in the Karagheusian company, has been a normal and gradual development, keeping pace with the growth and changing character of the business. The purchasing department handles the buying for the two New Jersey mills, the general offices in New York City, and the branch organization. Chief items of purchase are chemicals, dyes, burlap, and shooks, besides the thousands of mill supply items necessary to keep a busy factory running smoothly. In a steadily growing organization such as this, large purchases of machinery and equipment are by no means infrequent. These too have come within the scope of the purchasing department, even to the initiation of the projects as the need becomes apparent or as further production economies are indicated. The total purchases handled by the department, exclusive of these special capital expenditures which vary widely from year to year, amount to more than a million dollars a year, represented by about 8,000 purchase orders issued annually

No attempt is made to purchase at this office for the company's foreign operations, though the department stands ready to help on any difficult requirements which may arise. The impracticability of a regular purchasing service of this nature, due to geographical considerations and differences of needs and of temperament, is illustrated by a request received from the Tientsin plant for samples and quotations on rubber boots. The purchasing department complied. More than two years after the information had been furnished, when the original quotations had long been voided and no one had any clear recollection of what samples had been sent, a requisition came through calling for a small lot. This typical incident was convincing evidence that such an arrangement was hardly

workable.

Stockrooms at the factories are in charge of the respective plant managers, outside the direct supervision of purchasing, but the stores policy is closely tied in with the purchasing program and procedure. This is accomplished by the practice of close coordination, by specific entries on all purchase requisitions and receiving reports so as to keep the purchasing department informed on the stores situation at all times, and by frequent conferences to adjust maximum and minimum

quantities in accordance with the fluctuations which are inevitable in an industry where style and color trends are important considerations affecting demand at any given time. Stores were centralized at each plant shortly after purchasing was centralized, as it was soon realized that the two functions are inseparably related in the common objective of materials control.

More Than Procurement

The purchasing department has not confined its concept of the job to mere procurement of the supplies called for on requisitions, but has consistently assumed the responsibility of finding more suitable materials and better ways of doing things, considering the end cost of the product rather than the costs of the individual component parts. Consequently the record of its contribution to company operation goes beyond an ac-

counting audit of the purchase file.

Typical of the accomplishments directly attributable to suggestions from purchasing, and apart from the actual work of procurement, are: the adoption and use of high grade gummed fabric labels, attached to the rug with a single application of heat and pressure, and eliminating a slow and unsatisfactory hand sewing operation; the development of a new method of packing for shipment in burlap, saving labor for the company and saving shipping weight for the customer; working with a supplier of equipment to develop a process (patented in the name of the Purchasing Agent) for "sideserging" or finishing the edge of a strip of carpet, adding greatly to the pleasing appearance of the prod-These instances are typical of what an alert purchasing department can contribute to better operating procedure, product design, and ultimate economy, quite aside from the quality or cost of materials. There are other instances which may bulk even larger than these in dollars and cents on the balance sheet.

Personnel

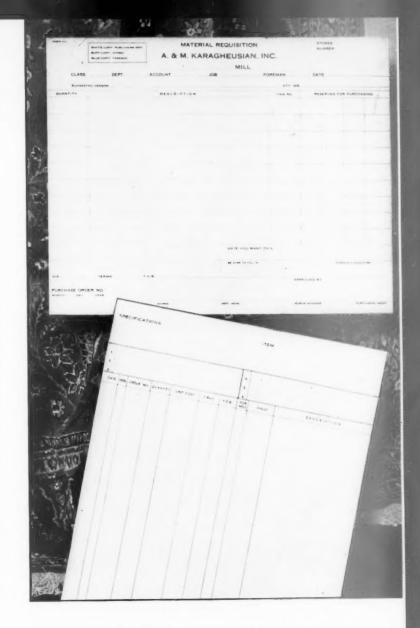
The department is small, compact, and distinctly on the young side. It consists of the Purchasing Agent, his assistant, and two clerical workers. It is possible for this small staff to perform a sizable buying operation expeditiously and efficiently because two principles have been constantly borne in mind in setting up the department and its procedure:

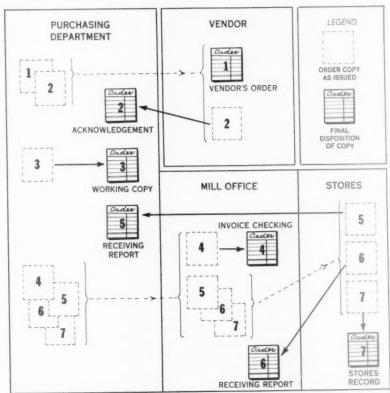
(1) Instead of dividing purchase responsibility strictly according to commodity groups or on any other basis, the Purchasing Agent and his assistant make it a point to be familiar with all phases of the buying, and can handle any transaction interchange-

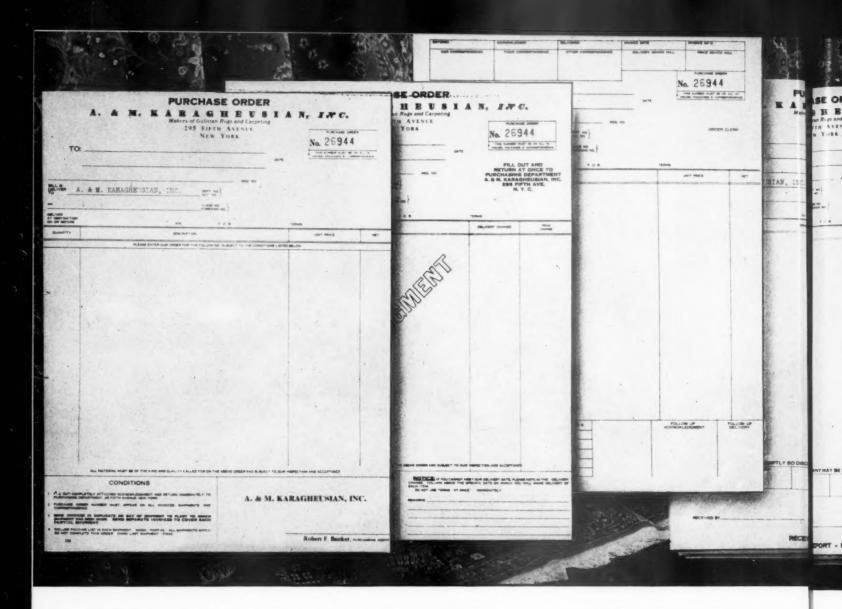
The Material Requisition serves as a work sheet for the tabulation of bids in the purchasing department.

The Purchase Record Card is the heart of the record system, carrying the complete history of each item purchased.

Flow chart of the Purchase Order. There is no lost motion. When the order is completed, the purchasing department has its working copy, supported by the acknowledgement from the vendor and the receiving report from stores; the mill office has its invoice checking copy, supported by the receiving report; the stores department has its record of delivery; and the vendor has the original order.







ably. Because of this, peak loads of activity can readily be divided between the two men, and the process of interviewing, follow-up, or any other part of buying will not be interrupted or delayed by the temporary absence of either one.

(2) Paper work has been kept at a minimum consistent with efficient conduct of the office and the main-

tenance of adequate records.

Robert F. Banker, Purchasing Agent, was principally responsible for the establishment of the purchasing department in the first place, and has directed it from the beginning. He is a graduate of Williams College in the class of 1928. After a year and a half in the field of real estate financing, he came into the Karagheusian organization to develop statistical records for the company. His interests, however, immediately went beyond a somewhat routine job, and he had the initiative to make suggestions based on his observation of conditions as he saw them.

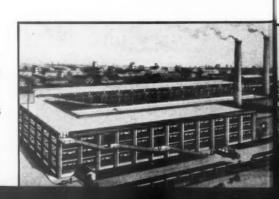
Purchasing at that time was completely decentralized, little attention having been given to this function during the rapid expansion of the company. Banker had no preconceived ideas on the subject, but he saw an opportunity for improvement, and at his suggestion a tentative experiment was made toward the consolidation of requirements of office supplies. It worked out so successfully that the buying of these materials was centralized, and at this stage their purchase was made a duty of the bookkeeper.

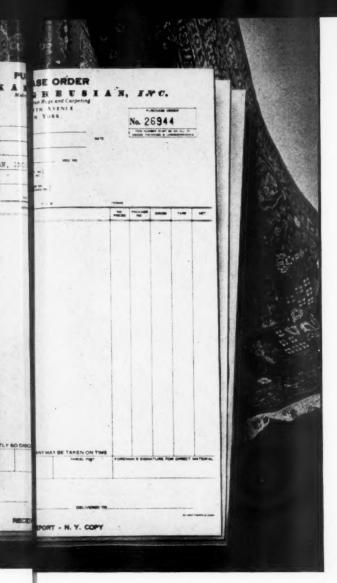
This was a modest beginning, but it demonstrated the possibility of larger savings. His next purchasing experiment was on woven labels, an item constantly in demand, and in substantial quantities. A study of this situation, and new purchase arrangements which he was able to negotiate, represented a saving of five to six thousand dollars a year as compared with previous experience, and definitely indicated the need for centralized buying on a more comprehensive scale. For the next six months, however, progress to that end was made rather cautiously. The initial step was to have all requisitions sent to the New York office for an OK before purchasing. This provided a spot check on material requirements, and a few items were selected for special purchasing attention.

In January, 1931, a purchasing department was set up as an integral part of the organization, and Mr. Banker was placed in charge. In that same year he joined the New York Purchasing Agents' Association, and he has been an active and interested member ever since. Under his direction the department has developed and procedures have been established, sometimes along rather unconventional lines but always keyed to the particular requirements of the company and its personnel, with common sense and service as the guid-

Chinese Spinning Division, Tientsin.

PURCHASING





ing motives. It is a tribute to his ability and diplomacy that both management and operating officials have been thoroughly sold on a plan which was a major innova-

tion in the company only a few years ago. Edwin B. Bachman, assistant to Mr. Banker, likewise came into purchasing work shortly after finishing his college course, and has gained his experience on the job and through association contacts. A graduate of Lafayette in the class of 1934, he joined the Karagheusian organization after a few months in the retailing field. He has been a leader in the Metropolitan Purchasers' Assistants Club, serving as its vice president last year and currently as chairman of the executive board.

Organization Plan

In the general plan of company organization, the Purchasing Agent reports directly to the Treasurer, who is likewise responsible for plant management through the respective plant officials. Thus purchasing is coordinate with production, but is allied with management rather than with operations. There is no formal line of authority connecting the two functions,

Weaving Division, Freehold, New Jersey.

The Purchase Order traces the transaction through to completion.

which are regarded as separate responsibilities, the success of the plan depending on a policy of coordination.

This is emphasized by the fact that the purchasing office is maintained at the New York City headquarters, 295 Fifth Avenue, and not at one of the factory locations. This is a somewhat unusual arrangement in organizations of this size. It is quite understandable in view of the history of centralized purchasing in this company, as cited above. It has been retained, not only because it has worked thus far, but because there

are a number of distinct advantages.

One very practical consideration is the fact that a much closer contact can be maintained with suppliers' sales representatives through the New York office. A comparison of experience with buyers who are located at plants off the beaten track indicates that three to four times as many salesmen call at the New York office than would be the case at Freehold or Roselle Park. Contrary to some popular misconceptions of the purchasing-sales relationship, Mr. Banker welcomes this opportunity for wider and more frequent contacts with salesmen. It enables him to be constantly in touch with new developments, markets and sources of supply. It also eliminates purchase delays, for besides the greater number of calls, most of the salesmen are readily reached by local telephone and can be called in on short notice if necessary.

Furthermore, this location means that the management or "controller's" angle is retained in buying, and that purchasing will not be too much swayed by pressure from production departments, where the requirement of the moment may seem all out of proportion in importance, with the result that buying factors are constantly subordinated to production details. There are, of course, two schools of thought on this point-one holding that purchasing is primarily a part of management, and one holding that it is purely a service to production. The Karagheusian purchasing department is organized and conducted on the former principle.

This does not imply that service to production is underrated or impaired in any way. As a matter of fact, with direct lines to each plant, purchasing and production are as close as the telephone. Also, the Purchasing Agent makes it a point to be at the plants frequently-every week at Freehold, and every other week at Roselle Park. On these trips he is available to receive and to adjust any complaints which might arise, and he establishes a personal relationship with foremen and department heads who have occasion to call upon purchasing department service. The departmental routine has been planned especially to satisfy the conditions of this separate operation, and no delays in service are traceable to this factor. It does entail a slight amount of extra paper work, but this is far outweighed by other considerations.

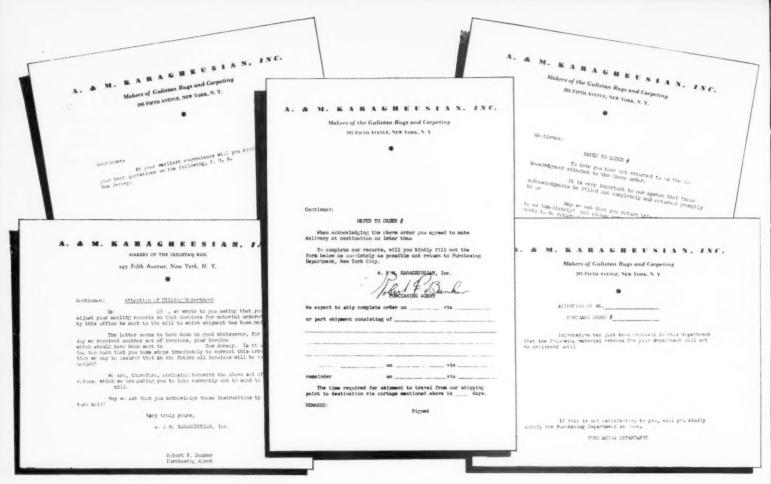
Requisitioning Materials

Standard materials are kept on hand in stockrooms at the respective plants, under the general supervision

Spinning Division, Roselle, New Jersey







Mimeographed form letters take care of routine correspondence with vendors and with the factory offices.

of the plant manager. These stores are operated on the usual maximum/minimum quantity basis, quantities being revised from time to time according to manufacturing schedules and style trends. For such materials, the requisition originates in the stores department when the predetermined ordering point is reached.

Material requisitions made out by the foremen also clear through the stores department at the plant. Such a requisition, initialed for authorization by the department head and the works manager, must be certified by the stores department to show that the material is not in stock, before the requisition comes to the purchasing department for action.

The requisition (Figure 1) consists of an original and two carbon copies. One copy is retained by the foreman, and one by the stores department. The original is sent to purchasing. As a shortcut in paper work, the right hand section of this form is ruled as a work sheet for the purchasing department, where bids can be entered and compared without making a separate tabulation. When the requisition is reviewed by the Purchasing Agent, some changes may be indicated as desirable. The obvious example is a change in quantity to conform with standard packages or advantageous buying quantities. If any such changes are made in the purchasing department, the originator of the requisition is informed promptly so that his own record can be changed to conform. A mimeographed form letter is used for this purpose.

The requisitions, as they are received in the purchasing department each morning, are clipped to the appropriate purchase record card and passed along to the Purchasing Agent.

Purchase Record Card

The purchase record card (Figure 2) is the heart of the record system. It facilitates the purchase procedure, serves as the master card for carrying the transaction through the department to completion, reduces entries to the absolute minimum, and provides a complete and permanent purchase record showing vendors, quantities, unit costs, and total values of each item purchased.

There is a separate card for each item, though various sizes, etc., of the same item may be consolidated on one card. It is of light weight buff bristol, $8\frac{1}{2} \times 11$ inches in size, corresponding to the size of the requisition and the purchase order forms with which it is used. The heading includes a description of the item and a resume of the specifications necessary for ordering. Immediately below this are six numbered lines for entering the names of approved vendors from among whom the selection of the supplier is to be made or from whom bids are to be invited. The salesman's first job in selling the Karagheusian company is to convince the purchasing department that his firm should be listed here.

Below this space, the card is ruled into columns where all past orders for the item have been entered, showing the date, the vendor (by number, referring to the approved list), the order number, quantity, unit cost, terms, F.O.B. point, the mill for which bought, and total value of the purchase. A final column, headed "Description," provides for various sizes, colors, etc., which may come under this particular purchase item. Thus when the requisition reaches the Purchasing Agent, clipped to the record card, he has before him a complete history of previous purchases of the material.

Placing the Order

Purchase negotiations are carried on in the usual way. The vendor may be selected directly from the approved list, according to the Purchasing Agent's judgment, or bids may be invited by telephone or by mail for consideration before the order is placed.

The purchase order is a seven-part fanfold form. It has purposely been kept very simple, and the only conditions imposed as a part of the order are those which concern procedure. These are four in number:

(1) An acknowledgement is asked for. By dint of much perserverance in educating suppliers to the importance of this request, the condition has now been reached when 90 to 95% of these acknowledgement forms are returned.

(2) The purchase order number appear on all invoices, shipments, and correspondence relating to the

(3) Invoices are to be sent promptly, in duplicate, to the plant to which shipment is made, with separate invoices to cover each partial shipment.

(4) Packing lists are to be included in each shipment, marked "partial" or "final" as the case may be.

Observance of these conditions is essential to the

Observance of these conditions is essential to the smooth working of the procurement system and to insure accurate materials control.

The original and duplicate (acknowledgement copy) are sent to the vendor. The carbon is cut so that prices entered on the original order do not show on the duplicate. Instead, the columns at the right are used on the acknowledgement to indicate any changes in price or delivery date on the part of the vendor. Such changes, if acceptable to the purchasing department, are reported to the factory office where the requisition originated, so that they will be acquainted with the terms applying to the transaction. If the acknowledgement is returned without change, it completes the contract arrangement. The returned acknowledgement is then clipped to the purchasing department's office working copy of the purchase order, awaiting the completion of the transaction.

The third copy is the purchasing department work sheet. It is a full carbon copy of the original order, and has a ruled block of spaces at the top of the form for the entry of routine detail concerning the progress of the order—acknowledgement, delivery, invoice date, invoice OK, delivery advice and price advice to the mill, and reference to pertinent correspondence. A second block of spaces at the bottom of the sheet is for the entry of follow-up for acknowledgement and delivery, and for receiving data as reported by the stores department.

The other four copies are sent to the mill office. The first of these, a full carbon copy, ruled exactly like the third copy, is used in checking the invoice. The other three, on which the carbon is cut so as to omit quantities ordered and price information, go to the stores (receiving) department. Here the carbon sheets are moved over to the right hand margin, and receiving entries are made as the deliveries come in. Without the information as to quantity ordered, an accurate and independent check on incoming shipments is necessary. When these entries are made, one copy is retained by the stores department, one is returned to the mill office, and one to the purchasing department.

The orders are numbered consecutively. For term contracts, a supply of regular purchase orders is kept without the serial numbers, and these are numbered as issued in a separate series with the suffix "C" to denote the special contract character of such orders, as 1-C,

2-C, etc. For deliveries against such contracts, regular purchase orders are issued in the normal sequence, a reference to the contract number being shown in the body of the order.

Checking Deliveries and Invoices

As the receiving reports are received daily in the New York office, a notation is made on a mimeographed form, indicating whether the order is completely filled or whether further deliveries are to be expected, and this is returned daily to the stores department, showing at all times which orders are filled and which are still open. This procedure entails practically no extra work, being a routine notation made by the purchasing department clerk as the receiving reports are checked.

Invoices are sent to the mill office by the supplier, and are checked there, being returned to the New York office when they have been certified as to the correctness of the charge, quantity, price and extension, and reconciled with the proper order number. A rubber stamp contains the spaces for these endorsements.

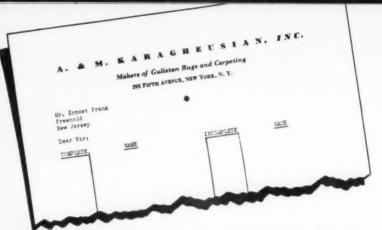
When the order has been completely filled, the entries are made on the purchase record card, which up to this time has carried only the order number, vendor's number, and date of the order, for reference in the event that further requisitions for that item should be received before this order is completed. The record is now complete, as all changes have of course been noted on the working copy of the order, and the amount of the invoice provides the information as to total value of the purchase.

Short Cuts in Routine

Extensive use has been made of mimeographed form letters in expediting the work of the department without the necessity of special dictation and typing for handling each individual case of a frequently recurring situation. Some examples of this in interdepartmental correspondence have already been cited—notification of change in requisition, the daily report of open orders, notification of price changes on orders, and a report of change in delivery promise.

The same principle has been effectively applied to routine correspondence with vendors. It is a practicable plan, for the circumstances requiring such letters are generally repetitive in nature, the same conditions

- Here's the story of α two-man purchasing department that started from scratch less than ten years ago and has been α leading factor in the development of an old established trading firm to α ranking position in its industry.
- Frankly experimental at the outset, centralized purchasing in this company has won the confidence of management and operating executives by a demonstrated record of efficiency.
- A million dollar buying program is handled with a minimum of paper work and red tape, leaving the Purchasing Agent free to concentrate on the broader aspects of his function.



As receiving reports are checked in the purchasing office, this daily report is made up for the stores department, indicating those orders which are complete and those on which further deliveries are to be expected.

arising over and over again. Being obviously form requests, there is no discourtesy in using the simplest possible means of communication, and the method is economical both as to mechanical cost and clerical effort. Experience in this department shows that it is an adequate method of handling such correspondence, and there has been no adverse reaction on the part of vendor companies. Among the specific uses of such form letters are:

Request for quotation.

Follow-up for acknowledgement of order. Follow-up for proper invoicing procedure.

Follow-up for delivery.
The last-named form does double duty in that it is designed to be returned to the purchasing department with the vendor's notation of the new delivery promise, thus extending the same economy of effort to the vendor organization. The information asked for includes shipping date for complete order, or partial shipment and balance, the method of shipment, and estimated time for shipment to reach destination.

Reports

The procedure outlined above has been developed over a period of years so as to minimize the necessary clerical work at every stage of procurement and receipt of materials without sacrificing any essential element of materials control. For the most part, essential information is incorporated in the original work sheets in such a way as to be available for reference and for permanent record. The single entry on the purchase record card at the conclusion of a purchase transaction, summarizes the purchase and provides the com-

plete history of each item.

The same principle has been applied to interdepartmental reports. The only periodic report now required from the stores department is a weekly report on labels—an item of considerable volume and importance, and one which is rather difficult to keep in balance with varying manufacturing requirements. The report lists, for each label item, the stock on hand at the beginning of the week, the quantity received, quantity used, and balance on hand. This information, showing current rates of use, and correlated with the company's manufacturing program, has simplified the problem of maintaining adequate stocks and at the same time keeping within reasonable bounds an inventory that could easily get out of control. Since this report has been instituted, the label inventory has been very substantially reduced, and wastage through the obsolescence of labels for inactive numbers has been practically eliminated, whereas it was formerly a considerable source of loss.

Report of Savings

One problem common to most purchasing departments is that of a report to management calling attention to specific accomplishments of the department, showing the value of centralized purchasing to the organization, and serving as a reminder and proof that the purchasing staff is alert to its opportunities. No satisfactory standards capable of general application have been devised to measure purchasing efficiency. Too often, in computing savings effected by good buying, whether by changes in materials, methods, or costs, the standard or norm which must be used for comparison is variable or hypothetical, the savings themselves are "estimated." Such evidence is not always convincing, even though it may be basically sound.

That problem has been met at the Karagheusian company in characteristically informal and effective fashion, and with a minimum of effort. At the time that any change is made in buying policy, which promises to effect a demonstrable saving for the company, the Purchasing Agent pencils a reminder note which goes into a file folder maintained for the purpose. There it remains until such time as the purchase has had a chance to prove itself and until there is a sufficient accumulation of data to warrant a report. No special records are required, no computations or clerical effort other than drawing off the actual data from departmental records and the actual writing of the report from time to time. More important, the saving recorded is a matter of established fact and not a prediction or an estimate. A relatively small item may have real significance when it is pointed out that a nominal saving has been repeated six or seven times in successive purchases over a six months period. A concrete and demonstrated saving for three or six months gives force and reality to an "estimated annual saving" which might otherwise be disregarded as wishful think-

The sort of information incorporated in these reports may be illustrated by the decision to change from selfmanufacture of wooden carpet poles to purchase of this item from a lumber yard equipped to do the job more economically. Under the previous practice it was necessary to purchase and carry a stock of lumber, plus the factory cost of turning out the poles and cutting them to length. Storage space was required for both unfinished and finished inventory, wastage was unpredictable, costs were variable and relatively high. By purchasing the poles, to specified dimensions, a definite cost was established, inventory was reduced, waste eliminated, and shop labor released to more profitable activity. All of this was foreseen when the change in purchasing policy was made, and was the reason that prompted the decision. But no claim of credit for superior judgement, or for an accomplishment in the way of reduced costs, was made until after some months of trial. Meanwhile the reminder note did not permit the matter to be overlooked by the purchasing department, and when enough data had been accumulated, it was a simple matter to show the comparative costs as an accomplished fact, in definite terms of dollars and cents for a given period, and to make an estimate of annual savings that was not open to question. Significantly, this particular instance, like many others which find their way into the record of this department, appears as the result of better purchasing in the sense of better policies or methods of getting things done, rather than merely as the result of a better price.

Naturally such reports are not compiled on any strictly scheduled basis, though the method itself is readily applicable to the preparation of annual or quarterly reports. In this case they are sent to the Treasurer of the company, under whom the Purchasing Agent operates in this organization.

Rating the Vendors

One other record, kept informally right in the Purchasing Agent's office for the information of the buyers, is a card record of suppliers, filed according to companies. In the regular course of business, certain observations are made as to the type of service rendered by the respective vendors, such as their observance of delivery promises, or a persistent neglect of invoicing instructions, any questions concerning quality of product or difficulties encountered in its use, special correspondence which may have been necessary, etc. As the buyer notes any of these matters in the course of regular departmental routine, he makes an entry on the vendor's card, showing the "debits" in red ink and the "credits" in black, thus setting up, over a period of time, a useful summary of vendor relationships.

This record serves two useful purposes. It can be consulted when the buyer is selecting a supplier from among those listed on the purchase record card, refreshing his memory as to past performance. It is likewise shown to the vendor's salesman on occasion, and has proved highly effective as a graphic reminder to him that his responsibility is not finished when the order is sent through to his company. There are many cases where minor shortcomings in service which would not have warranted a direct complaint, have been

brought to the vendor's attention by this means and have been corrected. There are also cases where repeated follow-up and correspondence has not availed to correct an annoying situation, but the salesman's vigorous complaint to his own house has brought prompt improvement, for he is personally interested in clearing the record and can be made to see the importance of what might seem like a trivial technicality to the home office. Thus vendor relationships have been noticeably improved by this simple record of experience, and many a casual sales call has been turned to good advantage when it might otherwise have been confined to passing the time of day.

The purchasing set-up at the Karagheusian company is particularly interesting because it has grown within a decade from nothing to a smoothly functioning organization fitted to the requirements of the company and daily proving its essential worth as an integral part of the management. Built upon no formal or borrowed pattern, and without any preconceived notions as to how the job should be done, it has been consistently focussed upon the requirement for service and has looked toward the ultimate objective of the company's product.

It is natural that basic procedures, approached from this angle, should follow the broad outlines that are now quite generally recognized as the elements of sound purchasing. For the same reasons, those details which depart from conventional practice commend themselves to the attention of purchasing departments where tradition has played a greater part in the formulation of organization policies.

EMERGENCY CONTACTS WITH SUPPLIERS

MERGENCIES are the bane of every purchasing department. Yet they continue to arise, often at the most inconvenient times, outside of normal business hours when the necessary contacts are most difficult to make. Even the most service-minded suppliers are not always equipped to receive and answer such demands, and it becomes one of the Purchasing Agent's many incidental duties to see that the emergency call goes through.

The purchasing department will therefore do well to be prepared, and the method used in one successful purchasing office is of more than casual interest.

Director of Purchases R. J. Boylan of the American Tobacco Co., New York, has built up a file of emergency addresses and telephone numbers in the list of his company's principal suppliers by issuing the following letter:

"There have been occasions when it has been necessary, in emergencies, for the members of this Department to contact our sources of supply after regular business hours and on holidays. In such circumstances, our inability to do this has caused us some slight embarrassment and in many instances a loss of business to our regular suppliers. To overcome this please furnish us, for the confidential use of this Department, an up to date listing of the names, home addresses and home telephone numbers of your representatives handling our account.

"We would likewise appreciate your advising us the name

RCHASING DEPARTMENT D—PRINCIPAL SUPPLIER Please type information requested below	S Date
	phone No
	Title
HOME ADDRESSES	HOME TELEPHONE NUMBERS
	Please type information requested below Office Tele

of the president or executive officer of your Company, as well as the business address to which communications directed to this executive should be sent.

"For your convenience, you will find attached a card on which please type information requested in spaces provided and return in the enclosed self-addressed stamped envelope.

"Please be good enough to mark your files so we may be notified of any future change of your executives and personnel insofar as it concerns this record,

"Again assuring you that this information will be treated with the utmost confidence and thanking you for your kind cooperation in the matter, we are

"Very truly yours,"

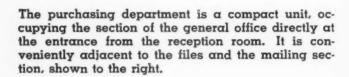
The card itself is illustrated above. With good luck, this special list will rarely be needed. But if and when it is needed, the information is on hand.



STREAMLINED

EFFICIENCY FEATURES NEW OFFICE LAYOUT

OF ALL-STEEL-EQUIP CO.



Windowless walls are not necessarily uninteresting or depressing. The use of color and plate glass partitions provides perspective. A 55-foot photo mural depicts the evolution of ASE equipment, from ore to finished product. A half mile of fluorescent tubing is decorative in itself and adapts the light to the need—46 foot-candles for general use, 55 foot-candles for transcribing, tabulating and printing departments, 61 foot-candles in engineering and production offices. The unobtrusive air-conditioning units, set flush in the ceiling, provide six air changes per hour.







A typical private office, harmonizing with the general office treatment. Note the acoustical tiled ceiling, and the single unit which heats, cools and ventilates.

Below: The reception room sets the keynote of streamlined

efficiency coupled with beauty, comfort and convenience. The roomy alcove shown at the left rear is equipped with chairs and conference table, and is used by the Purchasing Agent for some interviews with salesmen. Display panels of the company's products are shown in the first floor lobby.





COUNTER

CARD

FURCHASING

FUTURE

FUTURE

COUNTER

CARD

FUTURE

COUNTER

CARD

FUTURE

COUNTER

CARD

ASSUT

ASSUT

COUNTER

CARD

ASSUT

ASSUT

COUNTER

CARD

ASSUT

CARD

Above: Office managers and engineers were entirely free to work out their layout plans from the standpoint of operating efficiency, because daylight and natural ventilation were excluded. There was no need to consider windows, drafts, nor direction of lighting. Office procedure follows the straight-line flow principle. The purchasing department is the visitor's first point of contact. The salesmen's conference table is the first piece of furniture inside the door from the lobby. The initial layout provides space for 25% expansion.

Below: A-S-E's own ultra-modern steel furniture is used throughout the office. Lockers are set flush in the walls and become a part of the general decorative scheme.

Left: Modern warehousing shipping and receiving facilities on the first floor of the new building show the same regard for ideal working conditions, functional layout, smooth flow of work, and efficient equipment.



BOSTON GEAR WORKS SELECTS PLANT EQUIPMENT

Production, Technical and Purchasing Executives join in a careful analysis that considers all three viewpoints

IN THE selection and purchase of large plant equipment, machine tools, and the like, there are several distinct viewpoints that must be satisfied, or reconciled. Operating or production departments which are to use the equipment, the engineering or technical staff, the Purchasing Agent who is seeking greatest ultimate value, those responsible for general management policy, and the financial or investment angle—all of these have a definite interest to be considered.

At the Boston Gear Works, Inc., North Quincy, Mass., a procedure has been developed which handles this situation most effectively. It is based on recognition of the simple fact that all of these interested departments have a common objective in securing the equipment that will best meet the requirements of the company. To this end a brief but comprehensive method of analysis has been set up and embodied in a "New Equipment Questionnaire," which constitutes the purchase recommendation for the final approval of the President of the company. Its success as a

coordinating medium is evidenced by the fact that this recommendation carries the signatures of the Superintendent, Chief Engineer, Head of the Planning Department, Department Supervisor, and Purchasing Agent

Each department in this organization—materials handling, turning, cutting, etc.,—is headed by a Supervisor. When new equipment is being considered for any department, the Supervisor submits the necessary information to the Superintendent, and the latter passes it along to the Purchasing Agent, advising that the equipment is desired and requesting that competitive bids be secured. It thus becomes the responsibility of the Purchasing Agent to find out what types of equipment are available for the purpose. If it happens to be a production tool, performance is naturally a major factor, and production estimates are required to be furnished on the particular sort of work that is to be done on the equipment.

When complete information has been assembled and all the bids are in, a careful analysis is made by the Machinery and Equipment Committee, which is comprised of the five officers named above, representing production, technical and purchasing viewpoints.

Continued on page 64

NEW BALUTPARENT AURSTIONNAIRE	\	ESTIMATE
Da to	Purchase Price	ACTUAL
ArticlePor Dapt	Proight	
Article Type of Work To increase depactty?	Installation	
Type of Work To increase capacity? To improve quality?	Bquipment	
Deplacement? To improve quality? To reduce cost? To improve quality?	Pooling	
To reduce cost? Explain with estimate of savings	Other Coet	-
Explain water	TOPAL	
translition?		1
If replacement, what equipment will be retired and what disposition?	Book Value of	
16 Sebimonary	stemptaced Equipment	4
ATRET LE DOS .	Possible Salvage	1
if for additional departmental capacity, state overtime experience.	TOTAL	
If for additional departmental capacity, *table of: (a) Pwolve months prior		1
(a) Twolve months prior (b) Two months prior tehout this equipment	GRAND TOTAL	1
To be used on standard sizes? Can existing tools be used on this equipment?		Purchase Recommended:
Can existing tools be used on this equipment of not, estimate new tool cost		
If not, extimate new tool cost Manufacturer of recommended equipment		Superintendent
Nodel and description		Engineering
Nodel and description That competing equipment considered?		Planning Dept.
That competing equipment constants.		Dept. Supervisor
Reasons for selecting model	Date Purchased	Purchasing Agent
Seasons for	Purchased from	Plat Order No.
	Shop No. R	
	Horse Power	Serial Ho.
	ate Set Up	Ploor Space
		In Dapt.

COMMODITY PRICES



CANADA IS A NATION AT WAR. The current history of commodity prices under emergency conditions is remarkable for its stability and restraint despite a combination of factors tending to send the curve upward. An advance in 1941 may be unavoidable. But to date, in the face of sharply increased demand, dependence on foreign sources, an 11% loss on dollar exchange, and a 10% war tax, the price average has advanced only slightly over pre-war levels and is still relatively low. Government control of prices was authorized in the early days of the emergency and has been a potent force for stability in some key markets. The record, however, is primarily a tribute to efficiency of management and buying, and the evidence of a determined and unified national effort on the part of Canadian industry in the economic phase of a war in which materials and production may prove to be the determining factors.

IN CANADA

By JULIAN G. DAVIES

Purchasing Agent N. Slater Co., Ltd.

GLANCE at a chart of commodity prices over the last 25 or 30 years will indicate that prices now, and for some time past, are extremely low; so low, in fact, that moderate price gains in many commodities would be a healthful condition. Barring a collapse of business, any substantial change in prices must, of necessity, be upward.

Take the item of taxes alone. It is surprising how large a proportion of our sales dollar is now paid out in taxes, compared with 10, 15, and 20 years ago, and the proportion will be much larger two or three years hence. I can readily imagine us, in 1943, looking back on the year 1939, when we thought taxes were excessive, and thinking, "Those were the good old days." Taxes, along with other factors, sooner or later, are bound to force commodity prices to higher levels.

The law of supply and demand will still exert considerable influence over the next year or two, in spite of artificial restraints. In regard to supply, commodities fall somewhere between wheat, of which there is an embarrassing superabundance, and aluminum, of which there will not be nearly enough for our needs. It is not easy to see how there can be any appreciable increase in price in a commodity like wheat for a long time to come, while in most of those commodities where capacity production is not able to meet demand, prices will soon be raised to the point where at least a reasonable profit is obtained.

Right at this point, one of the restraining influences referred to, will enter the picture. Producers know that if they try to obtain more than a reasonable price for their product, the Government will clamp down on them, and this knowledge will act as a highly effective governor on the price situation, particularly on purely domestic commodities.

It is true also that as production increases, costs go down. That is one of the two chief reasons why prices haven't advanced more rapidly during the first year of the war.

Difficulties of Supply

When considering the situation surrounding supply, the fact that ocean transportation affects the costs of many materials should receive careful consideration. The next eight months will be highly significant ones in history. I still think one of the great weaknesses of the Anglo-Saxon race is our willingness to do much of our thinking with our wishbones, instead of with our brains. At no time has it been more necessary for buyers to face facts than right now. Right now, those who buy any of the large number of items which are produced in the Eastern Hemisphere, or the southern

Address at the Conference of Canadian Purchasing Agents, Toronto, October 5, 1940.

part of the Western Hemisphere, should, I think, give special attention to the implications of the war

Mark off those sections on a globe, then try to visualize the difficulty of securing rubber, tin, burlap, jute, bauxite, hog bristles, china clay, cork, silk, various gums and oils used in varnishes, paints, lacquers, soaps, etc., antimony tungsten, ferro-manganese, platinum, and many more. Even if there are only occasional sinking of ships, insurance rates will rise more than at present, seamen employed on vessels will demand higher wages, and other in-

creased items of operation will boost costs of trans-

The possibility of partial or complete elimination of transportation facilities in one or more of these regions, should also be seriously considered in relation to our requirements of materials, one, two, or more years hence, and also in regard to the prices we should have to pay in the event of such eventualities.

While dealing with the future availability of materials, and the effect of scarcity on prices, what (Continued on page 67)

CANADIAN COMMODITY MARKETS

Brief summaries of the reports presented at the Conference of Canadian Purchasing Agents, Toronto, October 5th

PETROLEUM LUBRICANTS. Demand sharply up, and rising to a maximum in 1941. Canadian production expanding and new refinery equipment being installed. No appreciable price advance expected unless raw materials advance.

WOOL. Supplies controlled by Government, which has purchased the entire Australian, New Zealand and South African clip for the duration of the war and one year beyond. No difficulty in obtaining adequate supplies, but time must be allowed to secure permits and for delays and losses in transit. Prices set by British Wool Control. Prices up 4% on wool, 6% on wool tops. Wool for military purposes $2\frac{1}{2}\%$ less than the price for civilian use.

FUEL OIL. Demand has increased steadily for several months. Supplies and tanker movement ample for well into the spring of 1941. Price up ½-cent per gallon since January. No price change expected in near future.

HIDES AND LEATHER. No serious shortages, though some satisfactory substitution of grades is being made. Prices more likely to go up than down, this being a volatile market, but no runaway prices are expected.

RAW SILK AND RAYON. Silk prices are uncertain due to speculation in Japanese and New York markets. Canadian price follows the New York market plus 11% exchange and 10% war tax. Rayon prices are up 10% since January due to high wages and the rise in pulp.

paint and varnish materials. No shortages of supply. Deliveries are prompt. Satisfactory substitute oils have been developed except for China wood oil. Price of standard finished goods has held within narrow range and no immediate rise is expected. Prices on special products are higher and speculative, due to exchange and tax.

FINE PAPER. Supplies are ample, with a surplus for export; U. S. competition curtailed by tax. Demand slightly lower than six months ago, due to cur-

tailment of direct-mail advertising. Prices up 10% since beginning of war, should be firm until early 1941.

PAPER CONTAINER BOARDS. Demand is large; supplies ample for maximum requirements and export. Pulp prices will hold at least to end of 1940, news prices through March.

WOOD PULP. Stocks of Scandinavian pulp on dock have shrunk by half since January. Domestic pulp is of poorer quality and in poorer demand, but larger demand is hoped for. Shortage will develop only if pulp is diverted for manufacture of smokeless powder. Prices are soft, and unchanged from third quarter.

STEEL PLATES. New plate mill at Hamilton will be in operation by February, providing Canadian capacity for practically all requirements, but supplies of billets may be difficult to obtain in 1941. Prices should not advance this year, but higher production costs will probably be reflected in rising prices after January.

PIG IRON. Canadian production for 1940 is 45% over 1939, going chiefly into steel making. Demand from foundries is increasing due to scarcity of scrap. Prices are up 13%. Most ore and fuel is imported. Great efforts are being made to keep a check on prices, but a further rise is indicated.

steel sheets. Canadian mills are practically at capacity. Deliveries for use on war materials are governed by the Steel Controller. Deliveries for non-military use are on a four to six months basis; deliveries from U. S. mills are fairly prompt—three to four weeks—but are more costly due to exchange. Orders for Canadian sheets are accepted only at "price ruling at time of shipment" but the base price was unchanged through September 30th; fourth quarter price up \$3.00 per ton.

TIN PLATE. Deliveries of Welsh tin plate are erratic but adequate, and no shortage is expected. Canadian pro-

ducers are gradually absorbing a larger share of the domestic market. Prices uncertain for 1941, subject to influence of Welsh product, which is under British Government control.

tool steel. Deliveries are adequate but becoming more difficult. Due to priority of defense requirements, domestic users must buy further ahead and are urged to use standard shapes and sizes, and the more common grades. Prices have been held firm, but costs have been rising for the past eight months.

SUGAR. All raw supplies produced in the Empire have been purchased by the British Government, and distribution is through the Sugar Controller of the Wartime Prices and Trade Board. Ample supplies are on hand and in sight, without any posibility of hoarding or runaway prices.

LEAD AND ZINC. Supplies are adequate. Entire output above domestic requirements is contracted for by British Government at the present market. No price advance since last December, and none expected.

CANADIAN LUMBER. Stocks of seasoned lumber are low, and are expected to be tight for the next six months. Special permission is required to buy some grades. Eastern birch and maple, and aeroplane lumber, are steadily higher. Otherwise prices are well stabilized and no-immediate increase is expected, though cost factors may force higher levels.

COPPER. Supplies are adequate, though deliveries are long and exports may have to be curtailed. Emergency orders and some purchases for stock are being placed in the U. S. Prices are well controlled, and no increase is expected unless labor costs rise further.

CRUDE RUBBER. Shipments are fairly normal; three months' stocks advised for operating protection. No price increase expected unless shipping costs advance.



NOW IS THE TIME TO

RELIGHT

New Lamps, New Equipments and New Methods
Obsolete Lighting of a Decade Ago

PLANT CAPACITY TO BE INCREASED—HUGE BACKLOG OF ORDERS ON HAND—TWENTY-FOUR-HOUR OPERATION STARTS

THESE and similar statements meet the eyes of those who scan the financial pages of our daily papers. Such happenings place added responsibility on the purchasing agent. He must be alert to take advantage of everything that will increase production and decrease spoilage which collectively result in decreased production costs. Experience proves that good lighting will do both. It did during the last war when orders for machinery and goods placed tremendous production burdens on industry. Every aid to production was then tried; machines were speeded to their breaking point; more machines were installed—and then someone thought of more light. Every test brought the same result—more light, more production. And contrary to the anticipations of many, the value of increased production was considerably greater than the increased cost of the higher levels used. All that was a quarter of a century ago, however, and since then progress in

By DEAN M. WARREN GENERAL ELECTRIC CO.

Spaced on 7 ½ x 9 ½ foot centers, these 85-watt RF fluorescent units provide 40 footcandles of cool bluish-white light at the working points.



lighting has been rapid. Actually more has been learned about the science of light and vision in the last ten to fifteen years than in the previous century. Practically all of the present recommended reflecting and diffusing equipments have been developed during the last ten years and every type and size of filament lamp has been changed and is now more efficient and there are also a host of new light sources developed during the past ten years that offer industry new values in lighting. Actually, the lighting dollar now purchases ten times as much light as it did just prior to the last war, which means that if the executive will only spend as much for lighting his factory today as he did in 1913, he will have an excellently lighted plant.

Let us review this progress step by step. Take the common everyday experience of seeing. Hundreds of thousands of tedious observations in our Lighting Research Laboratory have proved that seeing is not simple, not instantaneous, not effortless. In fact, seeing is a complicated and subtle process using a large

amount of nervous energy.

All the skilled work done in a factory is largely seeing — noting minute imperfections, gauging to tenthousandths of an inch, reading scales, blueprints, etc. Mistakes in seeing are costly in both materials and men.

Researches in seeing have established the fact that improved lighting helps all workers do better work—to do their work easier. Workers with normal vision are enabled to produce more useful work, while those with subnormal vision receive even greater assistance. For example, in an interesting laboratory test conducted some time ago with two groups, of workers, one with good eyes and the other with poor eyes, THE FIRST GROUP IMPROVED THEIR EFFICIENCY 14% WHEN THE LIGHTING WAS RAISED FROM 3 TO 12 FOOTCANDLES, AND THOSE WITH POOR EYESIGHT IMPROVED THEIRS BY 22%.

So much for employee efficiency. Now let's see what good lighting will do to lessen employee fatigue. In our laboratory people were tested one-half hour each week over the better part of a year on the simple task of reading a good book. Each week there would be a different amount of illumination from an indirect source. The three values selected were 1, 10 and 100 footcandles. The subject kept the fingers of his left hand on a key which he was told to press every time he turned a page. That key was connected to another laboratory where the pressure unconsciously put on the key was reported, unknown to the person taking the test. The pressure on that key recorded nervous muscular tension. WHEN READING UNDER 100 FOOTCANDLES THE TENSION AVERAGED ONLY TWO-THIRDS AS MUCH AS UNDER 1 FOOTCANDLE, WHICH IS JUST ANOTHER WAY OF SAYING THAT THE WORKER DOESN'T GET AS TIRED WORKING UNDER GOOD ILLUMINATION AS HE DOES WHEN HE WORKS UNDER POOR ILLUMINATION. IT IS A WELL UNDERSTOOD FACT THAT TIRED WORKMEN ARE MORE SUSCEPTIBLE TO CARELESS ACCIDENTS AND MISTAKES

Sources of large luminous area and low-brightness provide the quality of lighting required for such seeing tasks as reading indicating scales, micrometers, etc. A concentrating source is frequently desirable for projecting light into deep borings.

WHICH CAN PROVE QUITE COSTLY IN RUINED WORK.

Now as to lamp research, this has been pointed toward the development of sources which would make it economically feasible to provide the quantity of light which researches in seeing reveal as necessary for quick, sure seeing. Most notable development to come from the laboratories is the MAZDA F (fluorescent) lamp. This source has several advantages to recommend it.

1. It produces light of daylight color quality.

 It permits higher levels of lighting with existing wiring, providing power factor correcting equipment is used at the lamp.

 It produces cooler illumination—an important factor in obtaining high level lighting with comfort. One hundred footcandles are now entirely

practicable from this standpoint.

Daylight quality illumination has long been a dream of the research man. The daylight MAZDA F lamp is the dream come true, for the light from this source is the nearest approach to natural daylight that it has ever been possible to produce directly by a practical artificial illuminant at high efficiency. Wherever daylight quality is desired in the factory the MAZDA F lamps

can supply it

Another outstanding feature of the MAZDA F lamps is the very great reduction of infra-red radiation with its accompanying radiant heat. Actually the radiant heat from these lamps is only one-quarter that of filament lamps for equal footcandles, which means that the needed footcandles for most efficient operation can now be provided without the discomfort from heat formerly associated with high footcandles. Experiments with blindfolded subjects indicated that the average minimum level of illumination which they detected by a barely noticeable increase in the sensation of warmth was 600 footcandles for light from MAZDA F lamps and 125 footcandles from light from tungsten filament lamps.





Mercury lamps, with conventional screw bases, and adaptable to common types of reflecting equipment, have become available during the past few years. These sources, which are about twice as efficient as filament lamps and produce a bluish-green light that is psychologically cool and blends well with daylight, are being used in a wide variety of industrial installations as (1) mercury lighting alone, (2) combined with filament lamps in a common luminaire, usually the same wattage of incandescent as of mercury, and (3) on alternate outlets with filament lamps.

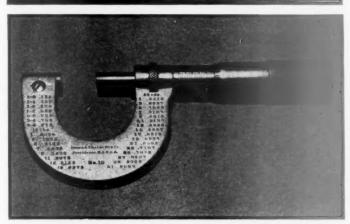
Filament lamps have undergone marked changes during the past decade. Efficiencies have increased. New construction results in improved ruggedness and durability. Hard glass in the higher wattage sources makes the lamps impervious to rain or snow and hence they can be used outdoors with safety. New design enables placing more wattage in smaller bulbs which means savings in storage space. These are but a few of the many developments in the regular line.

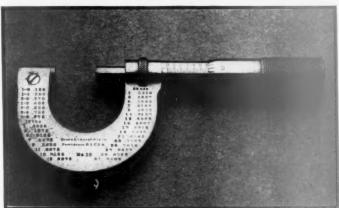
Newest of the filament sources is the Projector lamp. This lamp combines within a single sealed unit all the elements necessary for the production of controlled light beams. It is made of a special heat resisting glass having a special contour which is processed inside with a new type of mirrored finish. This is the first incandescent lamp to use this finish, which is not only extremely efficient but very durable. This source is particularly adaptable for installations where a high level of accurately controlled lighting is required over a restricted area from a unit of small dimensions.

Another type of lamp that has come into wide prominence in recent years is the silvered bowl lamp. This lamp provides its own reflector, so that the fixture becomes primarily a decorative shield. This source has made available (1) new flexibility in the use of lighting, (2) good maintenance of light output, (3) restoration of initial efficiency of many fixture, (4) reduction in maintenance costs, and (5) simplification of the

maintenance problem.







Top: Here's how a micrometer caliper looks to the machinist when he tries to read it under a typical general system of industrial reflectors.

Center: Here's hows it looks when lighted by a small light source.

Above: and how it looks when properly lighted by a source of large luminous area and low brightness. Note how easy it is to see the workings on the barrel.

Left: This installation of continuous rows of 40watt MAZDA F lamps in the new RLM unit provides these machinists with 40 footcandles of cool, well diffused illumination. Progress in lighting equipment has paralleled that of lamp development. The selection of the proper type of unit is more important today than at any time in the history of illumination. In the early days of electric lighting a reflector was largely a device for improving efficiency, because of the necessity of conserving light from the small low-wattage lamps then employed. To-day's light sources have outgrown the old-type reflector and we are in an era of lighting advancement calling not only for intelligent selection of equipment for efficiency, but also for diffusion, direction and control, suited to the task.

Many new equipments are available today which enable the engineer to tailor the lighting to the task. Recent industrial equipments are the Silvered Bowl Diffuser and the large-area low-brightness sources. The former combines the efficiency and ease of maintenance of the RLM Dome reflector with the low brightness of the Glassteel Diffuser. It consists of a porcelain-enameled steel reflector, equipped with a semi-diffusing Alzak aluminum insert. The insert makes possible a more even distribution of illumination than has heretofore been possible with porcelain-enameled equipments.

The large-area diffusing units consist of large luminous areas which are usually mounted 3 to 5 feet above the work and produce a quality of lighting similar to indirect. One unit employs fluorescent lamps

with suitable reflecting surfaces to insure reasonably uniform brightness. Another unit consists of a luminous element of white diffusing glass mounted in a box containing lamps. A third is in effect a mattewhite suspended ceiling illuminated by a trough reflector below the ceiling element. A fourth device consists of the same type of suspended ceiling illuminated by silvered bowl lamps placed below the ceiling.

Newest units to appear on the industrial lighting horizon are the RLM porcelain - enameled 2 - lamp fluorescent unit and the 2-lamp 85-watt RF unit. These units, like those discussed above, provide industry with the tools to achieve controlled lighting.

The selection of one type of unit above another is determined largely by the suitability of the equipment for the seeing task involved. The micrometer pictures offer a pictorial example of what can happen when the wrong kind of equipment is used.

The benefits of light conditioned factories are substantial and manifold. Relations between employee and employer are improved, accidents are prevented, product quality is increased, production schedules are faster, rejects and errors are fewer, waste is decreased and costs reduced. These are the dividends of modern lighting. DON'T LET POOR LIGHTING KEEP YOUR PLANT IN LOW GEAR WHEN MODERN LIGHTING CAN BRING YOU THESE DIVIDENDS NOW.

The following tables give the approximate number of footcandles obtainable from some of the newer equipments and lamps under average maintenance conditions.

ILLUMINATION VALUES CALCULATED FOR VARIOUS LAMP SIZES

Approximate Spacing	Distance from Under- side of Reflector to Floor to be Not Less Than	300- watt	500- watt	750- watt	400- watt Mercury	85-watt R.F. Fluorescent
8½ x 8½	81/2'	17-24				21-26
9' x 9'	81/2	17-21				18-23
91/2 x 91/2	9'		27-35			32-40°
10' x 10'	91/2		25-31	34-48		29-35°
11' x 11'	10'		20-27	30-40		25-31*
111/2' x 111/2'	101/2		18-23	27-36		*Two lamps
121/2 x 121/2	111/2		17-21	24-31	27-33	at each
131/2 x 131/2	111/2'			19-27	23-28	outlet
	Calculated for Glassteel					
		Di				



Illumination Values Calculated for Continuous Rows 40-watt
MAZDA F Lamps in RLM Reflectors
(Two Lamps per Reflector)

Approximate Spacing	Distance from Underside of Reflector to Floor to be Not Less Than 85-watt R.F.	Approximate Footcandles
5'	71/2	50-62
6'	71/2	41-51
7'	71/2'	35-44
8'	8'	31-39
8′ 9′	81/2'	27-34
10'	91/2'	25-31

Mounted 10 feet from the work, this 150-watt Projector Lamp will provide 100 footcandles over an area approximately 4 feet in diameter. Regular workers are taught how to use hand fire extinguishers.

By LEONARD F. MAAR

Safety Research Institute

BUYING

Photos-Courtesy Westinghouse Electric & Manufacturing Co.

FOR FIRE SAFETY

Fire Extinguishers Assume Important Role in Industrial Fire Defense

TRE safety is as much of a production problem as the foundry or machine shop. Even a small blaze can halt the assembly line or tie up other departments of a plant. So the purchasing executive is bound to have as much interest in supplying fire protection equipment as the other essentials of industry.

Probably every buyer in the industrial market is familiar with the lists of approved equipment prepared by the Underwriters' Laboratories and the Factory Mutual Laboratories. Fire insurance underwriters usually insist that approved equipment be used, and, even aside from that, these testing laboratories offer the buyer a valuable guide to dependability. The buyer's interest in fire safety need not end with these lists, however. Indeed, it should move him to explore the many other ramifications of the problem.

At this time particularly, when the nation is mobilizing for national defense and production in many lines is being expanded, there is reason for everyone to be concerned with fire safety. The records show that during such periods of activity in the past the incidence of fire increased with the rise in production. There is no reason why we need suffer this increased loss in the future.

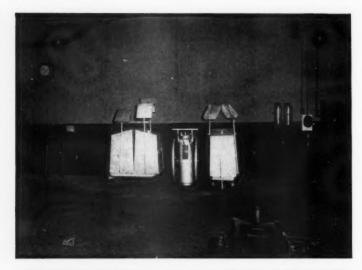
Then too, active sabotage is expected to become a more acute problem, and that very shortly. Already many branches of industry have been forced to guard against this possibility. Fire is one of the favorite weapons of the saboteur.

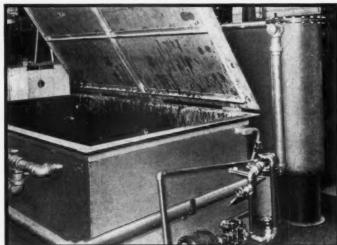
Organizing Against Fire

In every industrial organization worth the name there is someone charged with the responsibility for fire safety. He may be in the personnel department, or he may be a duly authorized fire chief. He may be the safety director. The larger and more progressive the company, the more vital the company is to national defense and the whole economy of the country and the more important a personage he will be. The purchasing executive may take lunch with this man every day in the company cafeteria and play a round of golf with him on Saturday, but still not understand the problems that confront him daily.

Fire safety depends upon men and equipment. The fire control expert must concern himself with both factors—the training of men and the provision and organization of suitable fire protection equipment. The purchasing department ordinarily need worry only about the last half of this equation. However, given time and opportunity to study the needs of the human factor, it can do its share of the job with greater efficiency.

There are new developments in the field of fire control, just as there are in other industrial processes, and the purchasing executive may well be aware of them. One important development is the reorganization of plant fire brigades on a departmental basis to take advantage of the principle of fire protection made possible by first aid fire appliances.





After fire breaks out, time of course, is vital. By cutting down the margin of minutes and seconds between the discovery of fire and its extinguishment, the possibilities for control are increased. Accordingly, many plants are organizing their fire brigades so there will be men in all parts of the factories capable of handling a fire emergency without delay. In each department miniature brigades are set up as units of the whole plant brigade. Their members are trained to strike hard and fast at the first tongues of flame. Fire extinguishers, of suitable types and in adequate number are made available for this attack, and in the majority of cases no other equipment is called into play. However, automatic sprinklers, standpipe hose and other heavy artillery are also provided in case the emergency is severe enough to require them.

The value of such a system in combating sabotage is obvious. In fact, one of the strongest measures of defense against the saboteur is more complete organization of employees into fire brigade sections.

Some Notable Records

Such a system has proven its worth in sixteen of the plants of the great Chrysler Corporation. Within three years after the departmental brigades were organized, this corporation reduced its annual fire losses

Another example of what careful planning for fire safety will do is found in the Endicott-Johnson plant in Johnson City, N. Y., where in one year the damage from 219 fires was only \$59.95. The Endicott-Johnson . properties comprise 54 large factory groups concenOne of the many fire stations for the workers' use. The equipment shown here includes fire extinguishers of various sizes and types, a fire alarm box, and a reel of hose.

All major fire hazards are protected with automatic extinguishing equipment. If the temperature of this dip tank rises above normal, a barrage of fireextinguishing foam will be released by the apparatus at the right.

trated in an area twelve miles long between Binghamton and Oswego. Normally there are about 18,000 employees who can produce about 135,000 pairs of shoes daily.

Recently a study was published of another impressive plant record, that of the Milwaukee paint factory of the Pittsburgh Plate Glass Company, where three million working hours were completed without an accident. Here too, the defense against fire begins with fire extinguishers and is aimed at the elimination of delays between the time of the discovery of fire and extinguishment.

Required Equipment

The value of the fire extinguisher is being appreciated on a wider front every day. On October 1 all the private motor vehicle carriers engaged in interstate commerce were brought under the safety regulations of the Interstate Commerce Commission. These regulations make it necessary now for private as well as common carriers to be equipped with fire extinguishers.

The trucks of many industries are affected by this regulation and the purchasing executives of these industries undoubtedly have read the regulations before buying the required extinguishers. They learned the extinguishers must be "of a type inspected and labelled by the Underwriters' Laboratories, Inc., under Classification B***."

Fit the Protection to the Hazard

This brings up another phase of fire safety that buyers should know about.

Long ago fire protection authorities, to aid in the identification of different kinds of fire, adopted classifications that are used generally by fire insurance underwriters, engineers, etc. These classifications follow:

Class A-fires in ordinary combustible materials such as wood, paper, rubbish, textiles, etc., which require the cooling and quenching effect of water for extinguishment.

Class B—fires in flammable liquids such as gasoline, kerosene, oils, greases, cooking fats, etc., which require a smothering and blanketing effect to exclude oxygen from the flames.

Class C-fires in live electrical equipment where a non-conducting extinguishing agent is required.

There are various types of extinguishers that are effective on one or more of the three classes of fire. They follow:

Class A fires—the soda-acid, foam, loaded stream, anti-freeze and water types are recommended. The vaporizing liquid type also is approved for use on Class A fires that are not deep-seated.

Class B fires-the foam, loaded stream, vaporizing liquid and carbon dioxide types are recommended.

Continued on page 68

THE MARKET PLACE



First - of - the - month quotations for carloads or mill shipments, with comparative prices quoted one month ago and one year ago

ACIDS	Nov. 1 1939	Oct. 1 1940	Nov. 1 1940
Acetic, 28%, cwt	2.23	2.23	2.23
Muriatic, 18 deg., cwt		1.50	1.50
Nitric, 36 deg., cwt		5.00	5.00
Oxalic, Works, cwt	10.75	10.75	10.75
Phenol, Works, cwt	14.25	14.25	14.25
Sulphuric, 66 deg., ton	16.50	16.50	16.50



	Nov. 1 1939	Oct. 1 1940	Nov. 1 1940
Saltpeter crystals	.071/2	.081	.086 ↑
Ash, 58%, light, bulk, cwt.	.90	.90	.90
Caustic, 76%, solid	2.30	2.30	2.50 ₱
Sal, Works, cwt	1.10	1.10	1.10
Sodium			
Bicarbonate, cwt	1.70	1.70	1.70
Phosphate, cwt	2.10	2.10	2.10
Silicate, 60 deg., cwt		1.65	1.65
Sulphur, Comm., cwt		1.60	1.60

BUILDING MATERIALS

Brick, N. Y. dock, per M	12.50	12.50	12.00 ↓
Cement, f.o.b. plant, bbl	2.15	2.15	2.15
Glass, single B, per box	2.70	2.70	2.70
Lime, per bbl	2.75	2.85	2.85
Nails, wire, per keg	2.55	2.55	2.55
Oak flooring, per M. ft	72.00	84.00	83.00 ↓
Southern pine, K.C., per M. ft.	25.16	26.94	35.31 ↑



I	HEMICALS			
	Alcohol, denatured, gal	.311/2	.311/2	.311/2
	Alumina Sulf., Comm.,		3.75	3.75
	Works, cwt	1.15	1.15	1.15
	Ammonia, aqua, 26 deg., drums	.021/4	.021/4	.021/4
	Arsenic			
	White, cwt	3.00	3.00	3.00
	Red, cwt	18.00	18.00	18.00
	Chloride, ton	77.00	77.00	77.00
	Carbonate, ton	56.50	56.50	56.50
	Benzol, pure, gal	.16	.14	.14
	Borax, powd., ton	48.00	48.00	48.00
	Chlorine, cwt	1.75	1.75	1.75
	Formaldehyde, lb	.051/4	.051/4	.051/4
	Glycerine, drums, lb	.121/2	.121/2	.121/2
	Lead acetate, white, broken,			
	cwt	11.00	11.00	11.00
	Nickel sulphate			
	Double	.13	.13	.13
	Single	.13	.13	.13
	Potash			
	Caustic, solid	.061/4	.061/4	.061/4
	Permanganate	$.18\frac{1}{2}$.181/2	.181/2
	Sal Ammoniac			
	Gran, white, cwt	4.50	4.50	4.50
	Gran. gray, cwt	5.75	5.75	5.75



COAL & COKE

Anthracite, stove, mines	5.90	6.25	6.25
Bituminous, Cleaf, mine run	2.70	2.50	2.50
Beehive Coke, Connellsville	5.00	4.35	4.75 ↑
By-product Coke, Newark	10.80	11.38	11.38

FERTILIZERS

unit K20	.531/2	.531/2	.531/
Sulphate potash, 90-95%, bags.	36.25	36.25	36.25
Nitrate soda, bulk	27.00	27.00	27.00
Sulphate ammonia, dom. bulk	27.50	28.00	28.00
Steamed bonemeal, 3 and 50,			
per ton	28.50	32.50	32.50

GRAINS

Barley, malting, bu	.65	.711/2	.715/8	1
Corn, No. 3, yellow, bu	.483/4	.631/2	.62 \	
Oats, No. 2 white, bu	.391/2	.321/4	.36 ↑	
Rye, No. 2, Western, bu	.731/2	.623/4	.597/8	1
Wheat, No. 2, hard winter, bu	.841/2	.761/2	.781/2	4
Flour, spring patents, 196 lbs	5.70	4.95	5.05 ↑	

HIDE

Light native cows, lb	.14	1214	.14 1
Heavy native steers, lb		.13	
Calfskins 5-7 lbs per skin	1.85	1.40	1 60 4

	Nov. 1 1939	Oct. 1 1940	Nov. 1 1940
IRON & STEEL			
Pig iron, foundry No. 2	23.00	23.00	23.00
Pig iron, basic, valley	22.50	22.50	22.50
Cast iron pipe, New York		52.20	52.20
Forging billets, Pittsburgh base	40.00	40.00	40.00
Sheet bars, Pittsburgh base		34.00	34.00
Wire rods, Pittsburgh base Cold rolled sheets, cwt., Pitts-		40.00	40.00
burgh base	3.20	3.05	3.05
Hot rolled annealed sheets, cwt., Pittsburgh base	2.00	2.10	2.10
Cold rolled strips, cwt., Pitts- burgh base	2.95	2.80	2.80
Hot rolled strips, cwt., Pitts-		2.40	2.10
burgh base		2.10	2.10
Tin plate, cwt., Pittsburgh base		5.00	5.00
Bars, cwt., Pittsburgh base		2.15	2.15
Shapes, cwt., Pittsburgh base Bright wire, cwt., Pittsburgh		2.10	2.10
base		2.00	2.00
Ground shafting, cwt., Pitts-			
burgh base		2.65	2.65
Rails, ton, Pittsburgh base		40.00	40.00
No. 1 heavy melting scrap ton, Pittsburgh		18.50	21.00 ↑



Oct. 1 1940

Nov. 1 1940

Nov. 1 1939

PAPER

News, roll, ton	50.00	50.00	50.00
Book, M. F., cwt		6.40	6.40
Wrapping, northern, cwt	5.00	5.25	5.25
Wrapping, southern, cwt	4.00	4.25	4.25
Wrapping, manila jute, cwt	8.00	8.25	8.25
Chip board, No. 1, ton	45.00	35.00	32.50 ₺
Wood pulp, mech., ton	22.00	34.00	34.00
Wood pulp, sulph., No. 1, cwt.		3.171/2	3.171/2





METALS, NON-FERROUS

.20	.18	.18
.14	.14	.14
.121/2	.12	.12
.121/8	.115/8	.121/8 1
.121/2	.12	.12
.85	.84	.80 +
.0535	.0485	.0535 ↑
.35	.34	.34
00.01	173.00 1	70.00 ↓
.343/4	.343/4	.343/4
.53	.5175	.5125 ↓
.065	.0725	.0725
	.14 .12½ .12½ .85 .0535 .35 40.00 .34¾ .53	.14 .14 .12½ .12 .12½ .115% .12½ .12 .85 .84 .0535 .0485 .35 .34 40.00 173.00 1 .34¾ .34¾ .53 .5175

PETROLEUM

Crude, Mid-Continent	1.02	1.02	1.02
Crude, Penna		1.44	1.44
Gasoline, 65 oct	.0675	.045/8	.05 1
Bunker Oil C	1.15	1.15	1.15
Kerosene, 41-43 grav	.05	.048	.048
Penn. bright stock, light, 25			
P.T	.19	.19	.19
Penn. cylinder oil, 600 flash	.171/2	.171/2	.171/2



METAL PRODUCTS

Copper, wire, bare, cwt	15.375	15.375	15.375
Yellow brass sheets, high	19.06	19.23	19.23

RUBBER

Smoked	sheets	 .201/2	.193%	.205/8 1



NAVAL STORES

Turpentine, gal	.32	.363/4	.433/4	1
Rosin, Grade B, cwt		2.00	2.20	

PAINT MATERIALS

White lead, dry, basic, car-			
bonate	07	.07	.07
Carbon black	.033/4	.03075	.03075
Shellac, orange	.17	.14	.14
Lincord oil	00	083	083

TEXTILES

Cotton middlings, Galveston	.0897	.0922	.0935 ↑
Cotton varns, 22s	.27	.24	.251/2 4
Print cloths, 381/2", 64x60	.053/8	.051/8	.051/4 1
Sheetings, 37", 48x48	.065/8	.051/2	.06 ↑
Wool, fine combing, 1/2-blood	1.01	.88	1.03 ↑
Worsted yarns, French 2-40s	1.95	1.80	1.721/2 ₩
Worsted yarns, English 2-40s	1.85	1.65	1.75 ↑
Silk, Japan, double extra cracks	3.41	2.55	2.60 ↑
Rayon, viscose, 150, 40s	.53	.53	.53
Burlap, 10½-oz., 40"	.111/4	.0725	.074 1
Hemp, Manila	.101/2	.061/8	.061/2 1



Behind each one of these men is an investment of \$11,346.

You hear some people say "all steel is alike--it's made to specifications." But specifications can't include men, and the men who make it stand behind it. They are the most important factor in any steel you buy.

If you could see the pride of our Youngstown workmen as their steel takes form under watchful care, the painstaking caution of the chemist checking every heat as exactly as an airplane pilot checks his ship, the thoroughness with which the inspectors examine the detail of each product before they stamp their "O K" -- and our name and reputation -- on it if you could see all this and more, every hour of every day, you would know why we are proud of our products and proud of our men. Thousands of users know they can depend on the uniformity and quality of the steel to which these Youngstown workmen are devoting their lives.

Sheets - Plates - Pipe and Tubular Products - Conduit -Tin Plate - Bars - Wire - Nails - Tie Plates and Spikes.

25-19C

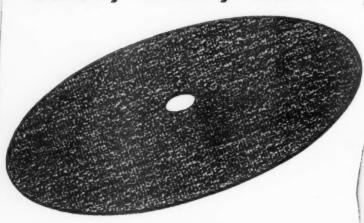
THE
YOUNGSTOWN
SHEET AND TUBE COMPANY
Manufacturers of Carbon and Alloy Steels

Manufacturers of Carbon and Alloy Steels
General Offices - YOUNGSTOWN, OHIO



BORN IN A HEAT WAVE

To Run
COOL, CRISP, CLEAN



NEW AP SILVER STREAK INSULATED GRINDING DISC

What happens when you bear down on the ordinary sanding disc to get a job out in a hurry? The disc heats – the glue bond melts – and the disc is shot as quickly as you can say Jack Robinson . . . If you've got one of the new AP Silver Streak Insulated Discs on your sander, you won't have to hurry the job – the disc will do it for you . . . It stays crisp and sharp-cutting even when friction takes its temperature as high as 1700 degrees! A minute's thought will tell you that discs are such an important, but low-cost part of your finishing that it pays to have the best. Ask your jobber for AP Silver Streak! Abrasive Products, Inc., 523 Pearl Street, South Braintree, Massachusetts.

ABRASIVE SOUTH BRAINTREE JEWELOX + JEWEL EMERY + JEWEL GARNET



PRODUCTS

MASSACHUSETTS

JEWELITE * JEWEL FLINT * NEW PROCESS

When writing Abrasive Products, Inc. please mention Purchasing

How Boston Gear Works Selects Plant Equipment

(Continued from page 52)

Their analysis is directed by the questionnaire form, which takes into consideration each principal factor of utility and value affecting the proposed application of the equipment, arriving at a decision acceptable to all concerned and for the best interests of the company.

The form itself is simple, being mimeographed on both sides of an ordinary $8\frac{1}{2} \times 11$ inch sheet. The questions are relatively few, but they cover, with essential supporting data, four basic considerations, indicating a definite line of thought in evaluating the proposed investment.

At the head of the sheet is a space for the date, the article, the department for which it is intended, and the type of work to be done.

The first series of questions establishes the need for the purchase, whether for (a) replacement, (b) to increase capacity, (c) to reduce cost, or (d) to improve quality. To support these rea-sons, some details are required. If it is for cost reduction, this is to be explained with an estimate of the savings. If for replacement, the analysis shows what equipment will be retired and what disposition is to be made of it. If for additional departmental capacity, there is a summary of overtime experience for the past twelve months, the past two months, and a four months forecast of overtime without this equipment. It is perhaps significant that no justification is asked for a purchase to improve quality of product.

The next series of questions concerns the adaptability of the recommended equipment, asking whether it is to be used on standard sizes, whether existing tools can be used on it, and, if not, an estimate of new tool cost. This is another point on which the Purchasing Agent must secure information.

The next questions have to do with the process of selection. Besides naming the manufacturer of the recommended equipment, and the model and description, the questionnaire cites whatever competing equipment has been considered, and the specific reasons for selecting the recommended model. A complete and careful job by the purchasing department is naturally prerequisite to having a satisfactory report at this stage.

On the reverse side of the sheet is a cost summary, breaking down the proposed purchase into seven cost items: purchase price, extras, freight, installation, equipment, tooling, and other cost, arriving at a total figure. In a parallel column to this estimated cost analysis is a space to be filled in later with a record of the actual costs incurred, broken down into the same seven divisions for comparison.

To get a proper cost figure, this analysis is followed by the book value of

replaced equipment and possible salvage value (estimated and actual), arriving at a grand total of the cost involved in the nurchase

On the basis of this data, which indicates the proper selection, all factors and all viewpoints having been considered, the purchase recommendation is signed by the Superintendent, Chief Engineer, Head of the Planning Department, Department Supervisor, and Purchasing Agent.

At the conclusion of the questionnaire form is a space for recording the purchase itself-the date purchased, the plant order number, vendor's name, shop number, serial number, horse power, floor space, department, and the date set up.

Commodity Prices in Canada

(Continued from page 54)

is our domestic situation? Here transportation facilities, power supply, the labor situation, and other factors have an important bearing.

We are now turning out a far larger volume of war materials than we were six months ago, but this will be greatly increased in another 6, 12 and 18 months. I don't know what the electric power situation is, but the fact that the Government ordered a return to Daylight Saving Time of a large proportion of our people in an effort to conserve power, would indicate the point is not far off when all the existing capacity

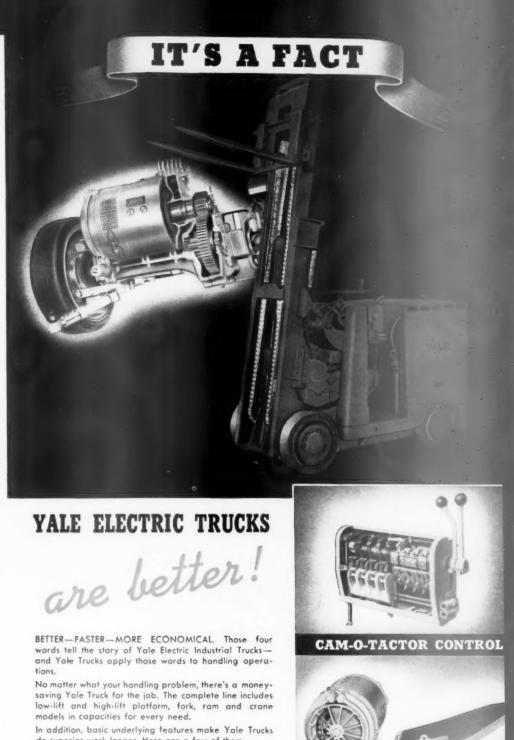
will be in use. The Labor Control Board will, I think, function in much the same manner as the Price Control Board. Steps will be taken to see that the wartime production of industry is not interfered with to any great extent by labor disputes.

Adequate transportation facilities, or the lack of such facilities, may well prove of outstanding importance. Difficulties in railway transportation occur first in the winter time. The volume of traffic offering thus far has not been more than the railways have been able to handle conveniently.

Exchange and Inflation

In addressing this convention a year ago, I mentioned the possibility, if our Empire met with severe reverses, of the disparity between the Canadian and U. S. dollars becoming more pronounced. If, in view of what has happened since, the official rate has not changed, I see no reason now why it should. In fact, one observer recently has mentioned the possibility of the Canadian dollar coming back to par, or thereabouts, in the comparatively near future, as a prelude to the granting of credits by the States to Canada. This is a possibility which should not be overlooked.

We have it, I believe, on no less an authority than the Bank of Canada, and of cabinet ministers over the past few years, that all possible steps will he taken to see that there is no mone-



do superior work longer. Here are a few of them:

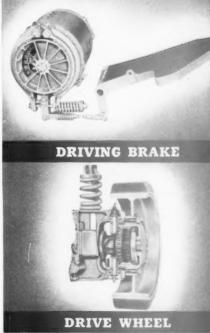
1. Drive Unit . . . uses straight spur, or combination of bevel and spur gears. Gears are drop-forged, chrome-nickel, heat-treated steel, codmium plated for longer life. For smooth operation, they are mounted on roller bearings and move in an oil batn. Here's extra power 24 hours a day!

2. Cam-O-Tactor Controller ... Positive mechanical cam and roller action makes and breaks contacts, guards against welding of contact points. Permanent alnico blow-out magnets instantly quench arc—lengthen contactor life. This improved simplified controller is safer, trouble-free—means fewer costly repairs and

3. Driving Brake . . . mounted directly on motor end head, operates on a high-speed cast-iron drum and transmits the braking action to both driving wheels via a train of gears and differential. Regardless of operating conditions, it brakes the power at the source—gives operator the added safety of simultaneous braking on both drive wheels.

4. Drive Wheels , ... are electrically welded disc steel type, mounted to the driving flange by specially hardened steel dowel balts. Wheels can be easily demounted without exposing the sealed bearings or disturbing alignment. Servicing time reduced to a minimum!

There is a Yale Electric Truck for your handling job. The Yale representative (listed in the Classified Directory) will be glad to tell you about it. Or write to us direct.

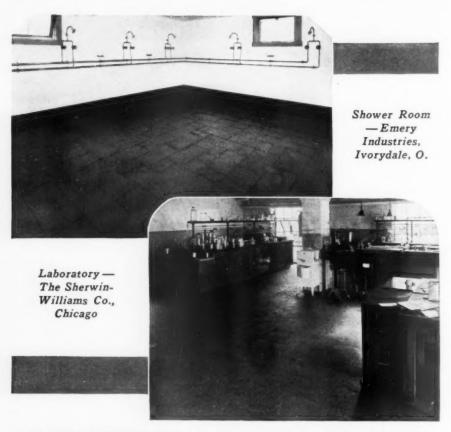


THE YALE & TOWNE MFG. CO.

PHILADELPHIA DIVISION, PHILADELPHIA, PA., U. S. A. IN CANADA: ST. CATHARINES, ONT.



Makers of Yale Hand Chain Hoists, Electric Hoists, Electric Industrial Trucks, Hand Lift Trucks and Skid Platforms



SOLVE INDUSTRIAL FLOORING PROBLEMS

with Carey ASPHALT TILE

HERE is the high efficiency flooring that industry has been looking for—*ELASTITE Asphalt Tile*—another development of CAREY research and experience.

Recommended as a superior flooring for factories, warehouses, loading platforms, service stations, printing plants, offices, stores, etc.—for general use wherever a suitable sub-base exists and where loading, temperature and chemical conditions fall within proper limits.

CAREY ELASTITE Asphalt Tile is a compound of asphalt and mineral filler, reinforced with asbestos fibres, densely compressed and die cut to size. Available in black and red colors, in ½" thickness, and in sizes 12" x 12" and 12" x 24".

This modern tile helps to reduce accidents, lower maintenance, save time, improve appearance, promote cleanliness. Specify it for new construction and for resurfacing rough or worn floors. Write today for catalog and samples — Address Dept. 68.

INDUSTRIAL BUILDING PRODUCTS OF ASPHALT — ASBESTOS — MAGNESIA

Roofing...Siding...Flooring...Insulations...Roof Coatings and Cements Waterproofing Materials...Expansion Joint...Asbestos Paper and Millboard

THE PHILIP CAREY COMPANY • Lockland, Cincinnati, Ohio

Dependable Products Since 1873

BRANCHES IN PRINCIPAL CITIES

tary or credit inflation. Despite those assurances, I believe it would be unwise to dismiss from our minds the possibility of inflation of prices.

If we study the history of commodity price inflations, extending back 2500 years, we will find that excessive governmental debt was the originating factor in practically all of them. Governmental debt throughout the world has never been as heavy as it is now, and it will be much heavier as time goes on.

In nearly all previous periods preceding inflation, governments have stated they would see to it that prices did not rise appreciably, yet in the final analysis governments were powerless to prevent it. It remains to be seen whether our present monetary facilities will be more effective than those of the past, but I think the possibility of price inflation over the next two or three years should be carefully watched.

A Moderate Advance

With the facts before us, analyzing and evaluating, as they may affect our interests, and making allowance, as well we may, for possibilities, I believe that over the next six and twelve months we should look for moderately higher prices in most commodities, and in many cases our inventories should be carefully examined at frequent intervals, to see they are adequate to provide for shortages in a number of lines.

Up until the bombing of London, there was much uncertainty as to how long the war would last; recent events would seem to indicate that it might last at least two more years. Certainly our enemies are far from the end of their rope; equally certainly, the British people are going to hand back, with interest, all they have received from the enemy during the first thirteen months of the war, before calling it a day.

Buying for Fire Safety

(Continued from page 60)

Class C fires—the vaporizing liquid and carbon dioxide types are recommended.

The fire control expert uses this data to guide him in selecting the types of extinguishers that are required by the class of fire that may be anticipated at any point. Thus, in a finishing department, where flammable liquid fires may be expected, he provides extinguishing units suitable for that hazard.

Servicing is Essential

Extinguishers must be serviced like any other equipment and this is a point the purchasing agent may wish to keep in mind. Replacement parts and recharging materials for extinguishers should be obtained from the manufac-



AMERICAN CHAIN & CABLE COMPANY, Inc. BRIDGEPORT



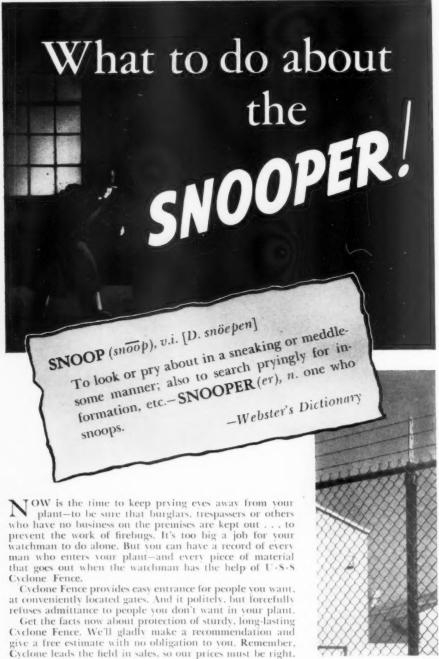






TRANSPORTATION





turers of the particular equipment used in the plant. The units produced by the various manufacturers are very much the same, but, for top efficiency, the fire cause they are recognized as the first line of defense against fire and their prompt and effective use will keep losses

insurance underwriters recommend that parts should not be switched from the units of one manufacturer to those of another. Fire extinguishers are not the whole of fire protection equipment. Purchasing agents can be advantageously informed about sprinkler systems, fire doors, fixed automatic extinguishing units, hose, and all the other items that contribute to fire safety. Emphasis is placed here upon fire extinguishers be-

at a minimum.

1 1 1 SOURCES OF SUPPLY

The October purchasing forum of the New York Association was devoted to the topic, "Sources of Supply." The questions raised in the announcement, as a guide to the general course of the discussion, provide every purchasing man with food for thought and self-examination as to his policies and procedure. Some of these questions were

How many sources of supply do you need for lumber; for mill supplies? Would you buy all your grinding wheels from one source if you used only a few hundred dollars worth a year?

Does some of your purchasing get into a rut and every order for steno note books go to the A Company; or do you keep alive the A Company's interest by passing out orders to some one else once in a while? At what point does it pay to have more than one source of supply?

Do contracts tie your hands? Does the seller make rules of selling that prevent you from having more than one source of supply (For instance, for corrugated cartons)? Is this a good or bad idea?

Do you seek requirement contracts or are they forced on you? Do you use "partial requirement" contracts?

In taking on a new source of supply, do you try to pick an old established house or do you try out the young new-comer in the field? Would it pay you to be the "godfather" to some growing

Loyalty to old sources of supply sometimes pays, and sometimes costs you money. How do you decide when to be loyal?

FREE! 32-Page

Book on Fence

Send for our free 32-page book that tells all

about fence. Crammed full of illustrations.

Shows 14 types for home, school, playground, and business. Whether you need a few feet of

fence or 10 miles of it, you need this book

Branches in Principal Cities

Cyclone Fence Co., Dept. Bilo
Waukegan, Ill.
Please mail me, without obligation, copy of
"Your Fence—How to Choose It—How to Use
It." I am interested in fencing:
Playground;
Residence;
Estate;
School, Approximately.......feet.

Standard Fence Company, Oakland, Calif., Pacific Coast Division United States Steel Export Company, New York

NITED STATES

PURCHASING COURSE AT TULSA

A class in industrial purchasing, sponsored by the Tulsa Association, is being conducted at the Downtown College of Tulsa University. At the latest report, eleven students have enrolled in the class, representing various types of industry and business, and interest in the project is very encouraging.

PERSONALITIES in the NEWS

Douglas Dow, formerly commissioner of Purchases for the City of Detroit, and a member of the purchasing staff at the Detroit Edison Company, has been commissioned Lieutenant Colonel, Quartermaster Corps. He will serve in an advisory capacity in the procurement of motor vehicles for the Army.

H. W. Christensen, General Purchasing Agent of the Columbia Steel Co., San Francisco, renewed his friendship with an old comrade of World War days on the occasion of Wendell Willkie's campaign tour to the Pacific Coast. Capt. Christensen was Willkie's



instructor at the first officers' training school at Fort Benjamin Harrison, Indiana, and subsequently served with him at Camp Taylor, Kentucky, in the artillery firing school at West Point, Kentucky, and in overseas service with the 325th Field Artillery. Mr. Christensen is a Past President of the Los Angeles Association, a former Vice President of District No. 1, N.A.P.A., and a Past Commander of San Marino Post 239 of the American Legion.

E. F. Bauman has been appointed Purchasing Agent of the Federal Mogul Corp., Detroit, succeeding M. A. Hunter, who becomes plant manager of the company's manufacturing division at Greenville, Mich.

Edmund A. Truelove has resigned as Purchasing Agent of the Providence, R. I., Public Works Department. No successor will be named, in view of the fact that a centralized purchasing department is to be installed next January under the new charter.

Major E. J. Plato, City Purchasing Agent at Sacramento, has been granted a year's leave of absence from that post to take charge of the nation's selective draft for the Southern California district, including the Counties of Los Angeles, Santa Barbara, Orange, Ventura, San Diego, Riverside, Imperial, and San Bernardino. Henry W. Peterson, who is in charge of the city's public service division, has been named Acting Purchasing Agent during Major Plato's absence.

William S. Riach has been appointed Assistant General Purchasing Agent for the Santa Fe Railroad at Chicago, succeeding Edward G. Walker, who retired October 31st after fourteen years in that office and thirty-seven years of service with the railroad. Mr. Riach has been connected with the stores division at Topeka since 1903, and has been chief clerk of that division since 1918.

Harry J. Graham, Secretary of the New England Purchasing Agents Association, is scheduled to address the salesmanship course of the Massachusetts Department of University Extension in Cambridge, November 12th. His topic is, "A Purchasing Agent Looks at Selling."

Stuart F. Heinritz, Editor of PURCHASING, addressed the New York Power Transmission Club, October 4th, on "Purchasing for National Defense — and After."

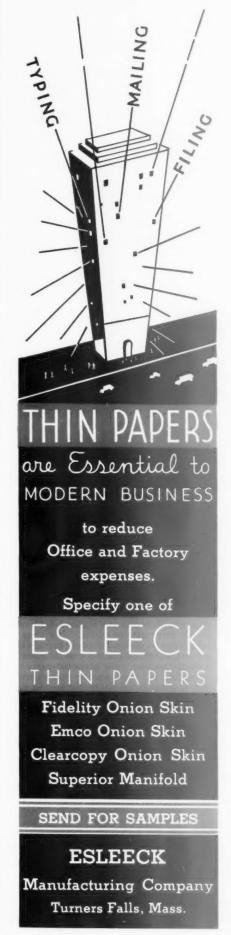
H. H. Whitcomb, assistant to the general manager of Marshall Field & Co., Manufacturing Division, in charge of purchasing, has been appointed assistant production manager with headquarters at Spray, N. C.

A. B. Harris, Purchasing Agent of the International Business Machines Company, Endicott, N. Y., addressed the opening session of the company's training conference for public utility executives last month.

Harry M. Johnson has been appointed Purchasing Agent for the Steubenville, Ohio, public schools, succeeding John L. Beatty, who retires after sixteen years in the office. Mr. Beatty was the first to hold this position in the city's school system.

Lieutenant Colonel Edgar J. Boschult, Assistant Purchasing Agent at the University of Nebraska, has been given a leave of absence for one year, having been called to active duty as a liaison officer to assist in the administration of the selective service bill. C. A. Donaldson has been named Acting Assistant Purchasing Agent during Col. Boschult's absence. Mr. Donaldson, who has charge of chemistry stores at the University, will also take charge of the University NYA service.

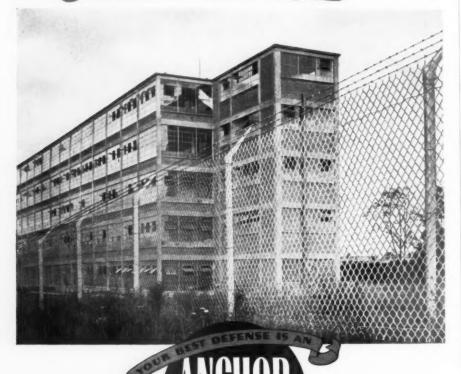
R. A. Porter has resigned as Purchasing Agent for the Department of Public Welfare at Birmingham, Ala., effective Nov. 1. No successor is contemplated in this office at the present time, as the adoption of the government food stamp plan has eliminated a great part of the purchasing duties.



It Takes More Than a Sign to KEEP OUT



Saboteurs



FENCE

With war abroad, and an increase in sabotage, espionage and troublemaking at home similar

to the conditions existing 25 years ago, it's folly to delegate the job of guarding even a single part of your property to a few signs and a watchman's intermittent visits. It's time to take steps to make definitely certain that no unauthorized person can take even a a single step on your plant property day or night. It's time, too, to make certain that normal workday traffic within your plant is fully controlled, that parts of your plant where important work is going on are segregated and easily policed against trespassers of all kinds.

An Anchor Fence rings your plant with a wall of steel which says "No" to sabo-

teurs, trouble-makers and trespassers—and means it! It keeps traffic moving within your plant on pre-determined courses.

pre-determined courses.

It guards the secrecy of your departments doing Government work.

Study your plant layout today. Then call an Anchor Engineer. Let him show you the many ways saboteurs can enter your plant—and how an Anchor Fence can seal up these unsuspected entrances.

Let him show you, too, how an Anchor Fence will make more of your plant property safe and usable by protecting outdoor storage yards, railroad sidings, open buildings. An Anchor Fence Engineer will gladly call on you without obligation if you'll check, fill in and mail the coupon.

Carle M. Bigelow, director of the pharmaceutical department, Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., has been appointed British Purchasing Agent for pharmaceutical products.

E. W. Fitzgerald, Purchasing Agent of the Equipment Steel Products Division of Union Asbestos and Rubber Co., Chicago, has been appointed Assistant to the General Manager of that company. In his new position, Mr. Fitzgerald will continue to have some supervision over purchases. J. C. Crawford has been named Purchasing Agent.

Frederick P. Rogers, Purchasing Agent of the Jamestown (N. Y.) Board of Education, was a discussion leader at a round table conference on specifications, tests and purchasing, at the annual meeting of the National Association of Public School Business Officials, held in Detroit, October 15-17. Mr. Rogers was also a member of the discussion panel dealing with the problems of smaller cities.

David Hutchison, formerly Purchasing Agent of the Crown Central Petroleum Corp., Houston, Texas, has been appointed Houston representative of the Atlas Supply Co., whose headquarters are at Muskogee, Okla.

John H. McLaughlin, Purchasing Agent of the Aeolian American Piano Co., East Rochester, N. Y., has been nominated as a member of Local Draft Board 561, which includes the towns of Mendon, Penfield, Pittsford, Perinton and Webster, N. Y.

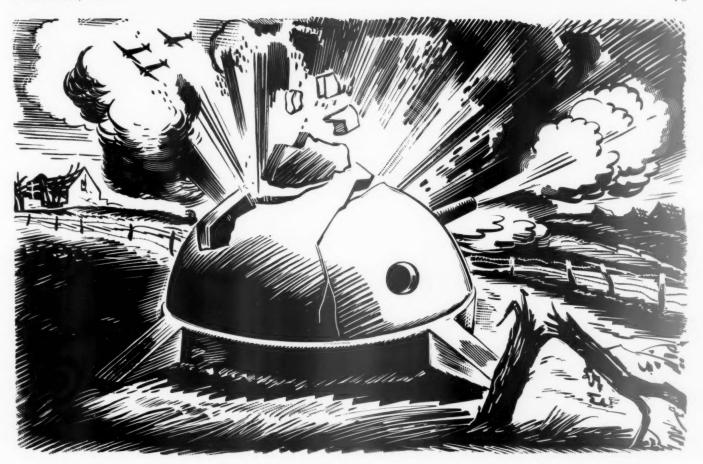
J. E. Nolen, Purchasing Agent for the Texas Co. at Houston, has been named head of the Purchasing Agents and Branch House Committee of the Community Chest campaign in that city. Several members of the Houston Association are serving with Mr. Nolen on the committee.

Ed Miller has been named Purchasing Agent for the firm of Bechtel, McCone and Parsons, at Orange, Texas. The company develops and designs oil field equipment, and does large construction work, having recently contracted to build a shipyard for Consolidated Steel Corp. Mr. Miller has been Senior Assistant Purchasing Agent for the Metropolitan Water District of Southern California for the past eight years.

PURCHASING COURSE AT DETROIT

Wayne University of Detroit is offering an evening class in "Industrial Purchasing," under the direction of R. G. Matley, Purchasing Agent for Whitman & Barnes, Inc. Enrollment at the opening session included twenty-six men from approximately twenty purchasing departments in the Detroit area, several of these representing companies which sent students to the course last year.

ANCHOR POST 6623 Eastern Avenue Baltimore, Maryland.	
☐ Please have Anchor	Fence Engineer call. 🗆 Send Illustrated Industrial Fence Catalog
Name	
Firm	
Address	



Couldn't Take It!

Military authorities now tell us that forts in the Maginot Line, built to withstand "average" shellfire, were literally blasted out of the ground by extra heavy cannon. Recent tests likewise reveal that corrugated board which stands up under average variations of humidity goes to pieces when subjected to extremes. Whereas board combined by The Stein-Hall Starch Combining Process—but why brag above our own signatures? Send to any of the companies named below for a copy of this impartial report of painstaking and practical comparative tests.

CORN PRODUCTS REFINING CO. 17 Battery Place, New York City

> STEIN, HALL MFG. CO. 2841 S. Ashland Ave., Chicago

> > CLINTON COMPANY Clinton, Iowa

THE STEIN-HALL PROCESS

PENICK & FORD, LTD., INC. 420 Lexington Ave., New York City

STEIN, HALL & CO., INC. 285 Madison Ave., New York City

THE HUBINGER CO. Keokuk, Iowa

A. E. STALEY MFG. CO., Decatur, Illinois

When writing The Stein-Hall Process please mention Purchasing

DISTRICT CONFERENCE AT BIRMINGHAM

The first annual conference of District No. 7, N.A.P.A., is scheduled to be held in Birmingham, November 9th, Conference headquarters are at the Redmont Hotel. Delegates will represent all Associations in the district-Birmingham, Chattanooga, Louisville, and New Orleans. The program is as follows:

Morning Business Session

Chairman, H. C. Green of Republic Steel Corp., former Vice President, N.A.P.A.

Call to Order, by Harlan E. Cross of Sloss-Sheffield Steel & Iron Co., District Vice President, N.A.P.A.

Welcome, by H. J. Belcher of Bir-mingham Electric Co., President of the Birmingham Association.

Address, "Expansion of Industry and Manufacturing in the South," by W. M. Adamson, Bureau of Business Research, University of Alabama.

Discussion.

Address, "Relation of Southern Agriculture to Purchasing for Southern Business," by Luther Fuller, Manager of Farm Products Div., Tennessee Coal, Iron & R.R. Co.

Discussion.

Address. "Commodity Prices and Trends," by James H. Alexander of the Cavalier Corp., Chattanooga, former Vice President, N.A.P.A.

Discussion.

Address, "Every - Day Purchasing Problems," by T. A. Corcoran of the Courier-Journal and Louisville Times, former Vice President, N.A.P.A. Discussion.

Buffet Luncheon Football Came

University of Alabama vs. Tulane University, at Legion Field Stadium.

Reception & Cocktail Hour Banquet

Address, by George A. Renard, Ex-ecutive Secretary, N.A.P.A., New York, Address, by R. H. Mangum, Assistant Vice President of the Alabama Power

Committees

Registration, Herschel Wilson of Long-Lewis Hardware Co. Football Tickets, L. C. Teague of

Tenneessee Coal, Iron & R.R. Co. Golf, Allen Rushton of Birmingham

Ice & Cold Storage Co. Sight Seeing, Richard Shively of Tennessee Coal, Iron & R.R. Co.

RAILROAD BUYERS ELECT

New officers of the American Transit Purchases & Stores Association were elected at the annual meeting of the Association, at White Sulphur Springs, Va., September 24-25. The men who will lead the group during 1940-1941 are as follows

President, James K. Hall, Purchasing Agent of the Columbus & Southern Ohio Electric Co.

Vice President, K. M. Pardoe, Assistant Purchasing Agent of the Capital Transit Co.

Executive Committee: Robert N Dowling, Director of Purchases & Stores, New Orleans Public Service Co.; G. L. Herzog, Purchasing Agent, Philadelphia Transportation Co.; and Ben Schupp, Purchasing Agent, Los Angeles Railway Corp.



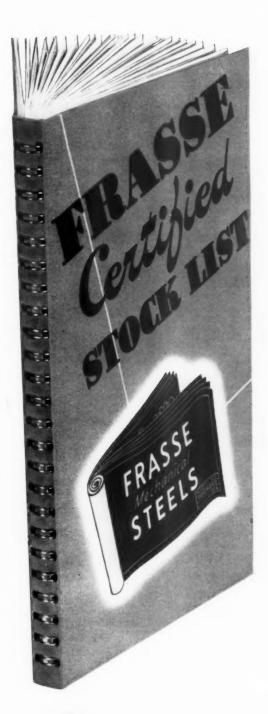
Wide Range of Products



PAFNIR production is not limited to a few types of bearings to the exclusion of others. Rather, the balanced line of Fafnir Ball Bearings includes every type and size of radial and thrust bearing, precision bearing, self-alignates bearing, sealed bearing and housed transmission unit to provide the most complete line in America.

Manufacturers who standardize on Fafnirs for original equipment or replacement enjoy the benefits that come with meeting every ball bearing demand from a single source of supply. The Fafnir Bearing Company, New Britain, Conn.

AFNIR Ball Bearin



Using Steel?

This book will save you time and effort!

Despite the sharply increased demand for steel, you still can get immediate delivery — and save time and effort in the bargain—when you use the Frasse Stock List.

The Frasse List is Certified. Every item listed is guaranteed, by an independent appraisal organization*, to be a regularly stocked size.

You lose no time checking shipments . . . waste no effort coaxing the plant to use substitutes. Simply select your size, and you get it at once—without fumbles or lost motion.

Today's demands make it beyond human skill to keep warehouse stocks 100% complete. The latest Frasse inventory shows the Certified Stock List exactly 97.7% accurate — only 2.3% of the sizes shown are temporarily depleted because of unpredictable demand.

You'll want to escape effort-wasting annoyances . . . to make each second count . . . in the weeks to come. Why not let the Certified Stock List help you? If you do not have a copy, send for one today. It's free.

Peter A. FRASSE and Co. Inc.

GRAND STREET AT SIXTH AVENUE, NEW YORK CITY STOCKS AT: NEW YORK • PHILADELPHIA • BUFFALO JERSEY CITY • SALES OFFICES: HARTFORD • BALTIMORE ROCHESTER • SYRACUSE • JAMESTOWN



- SEAMLESS AND WELDED TUBING TOOL STEELS STAINLESS STEELS COLD FINISHED
- BARS · SAE ALLOY STEELS · DRILL ROD · MUSIC WIRE · C. R. STRIP AND SHEETS

*The American Appraisal Co.

OCTOBER 1

OAKLAND—Luncheon meeting of the East Bay Group, Northern California Association, at the Lake Merritt Hotel. Motion picture, "Hurricane's Challenge," presented by G. J. Springer, Pacific Telephone & Telegraph Co.

OCTOBER 2

GARDNER, MASS.—Plant visit of the New England Association, at the Heywood-Wakefield Co., makers of furniture for home, theater, bus and railroad use. A luncheon meeting was held at the Colonial Hotel.

OCTOBER 3

BRADFORD—Dinner meeting of the Northwestern Pennsylvania Association, at the Emery Hotel. George E. Price, Jr., of Akron, President of the N.A.-P.A., was the principal speaker, discussing economic trends and the problems involved in the purchase of military supplies. Carl F. Lezius of Lezius-Hiles, Inc., Cleveland, spoke on "Printing."

SAN FRANCISCO—Football luncheon of the Northern California Association, at the Palace Hotel. Hal Saunders was master of ceremonies, introducing

Tommy Fitzpatrick, Rufe Klawans, and Edward N. Atherton.

OCTOBER 4

MINNEAPOLIS—Dinner meeting of the Twin City Association, at the Radisson Hotel. Members of the Twin Ports Association, the Engineers Society of St. Paul, and the Engineers Club of Minneapolis, were invited to participate in this meeting. Speaker: J. E. Tobey, Vice President of Appalachian Coals, Inc., Cincinnati, "A Better Understanding of Coal and Its Application." The meeting was preceded by an afternoon trip through the plant of the Munsingwear Co.

PORTLAND—Luncheon meeting of the Oregon Association, at the Mallory Hotel. Speaker: Harry Dorman, President of Knight Packing Co., "Mobilization for Understanding of Private Enterprise,"

OCTOBER 5

TORONTO—Sixteenth Business Conterence of the Canadian Purchasing Agents' Associations, at the Royal York Hotel, under the auspices of the Toronto Association.

Morning Session

Chairman, C. Russell McNeil of Fuller Brush Co., Ltd., President of the Hamilton Association.

Address of Welcome, by R. M. Sedgewick of Standard Chemical Co., Ltd., Toronto, Past President of the N.A.P.A. Address: "Canadian Business Prospects," by W. A. McKague, Associate Economist Council of Canadian Purchasing Agents' Associations.

Address by Fred C. Irwin of Canada Wire & Cable Co., Ltd., Toronto, Vice President of N.A.P.A. and Chairman - elect of Canadian Purchasing Agents' Associations.

Address by George E. Price, Jr., of Goodyear Tire & Rubber Co., Akron, President of N.A.P.A. Address: "The Paper Industry in

Address: "The Paper Industry in Canada," by F. G. Robinson, President of Canadian Pulp and Paper Association.

Address: "Affairs of the Council," by Sydney E. Webster of Dominion Textile Co., Ltd., Montreal, Past Vice President of N.A.P.A. and retiring Chairman of Canadian Purchasing Agents' Associations

(Discussion period after each address.)

Luncheon Meeting

Chairman, J. R. Bell of Business Systems, Ltd., Toronto.

Address: "The P. A., Past—Present—Future," by W. F. Pendergast, Assistant to the President, Imperial Oil, Ltd.

Afternoon Session

Chairman, J. Bruce Jordan of National Drug & Chemical Co. of Canada, Ltd., President of the Montreal Association.

Cyro Pilots CHECKED WITH GTD GREENFIELD GAGES



The "G.T.D. Greenfield" line of gages include plain and threaded, plug and ring gages; plain and thread limit-snap gages, and a large number of special types.



In this picture of the oil sump assembly of a Gyro pilot, can be seen 14 different "G.T.D. Greenfield" Gages—reasons why this part will be *right*.

A long-time record for accurate manufacture, the development of our "Rex" surface treatment for long life and our experienced gage engineering service make "G.T.D. Greenfield" Gages especially interesting to any manufacturer. A study of your needs will be made without obligation.

GREENFIELD TAP & DIE CORPORATION

Greenfield, Massachusetts

Detroit Plant: 2102 West Fort St. Warehouses in New York. Chicago, Los Angeles & San Francisco. In Canada: Greenfield Tap & Die Corp. of Canada, Ltd., Galt, Ont.



TAPS · DIES · GAGES · TWIST DRILLS · REAMERS · SCREW PLATES · PIPE TOOLS

When writing Greenfield Tap & Die Corporation please mention Purchasing

Address: "From One P. A. to Another," by George A. Renard, Executive Secretary of N.A.P.A., New York.

Address: "Foreign Exchange Control," by C. K. Highmoor, Supervisor of Foreign Exchange Control Board, Ot-

Address: "Commodities and Prices-Where To and How Fast?" by Julian G. Davies of N. Slater Co., Ltd., Hamilton.

Commodity Reports:

Petroleum Lubricants, by B. C. Kitchen of Imperial Oil, Ltd., Toronto. Wool, by W. F. Ferguson of Penman's Ltd., Paris.

Fuel Oil, by S. J. Walter of Canada Foundries & Forgings, Ltd., Welland. Hides and Leather, by Albert Bru-

bacher of The Breithaupt Leather Co., Ltd., Kitchener.

Raw Silk and Rayon, by J. E. Lecours of Belding-Corticelli Ltd., Montreal.

Paint and Varnish Materials, by E. J. Trott of International Paints (Canada) Ltd., Montreal.

Fine Paper, by W. M. Hall of Power Corp. of Canada, Ltd., Montreal.

Paper-Container Boards, by J. S. M. Hayes of Shipping Containers Ltd., Montreal.

Wood Pulp, by E. H. Judge of Price Bros. & Co., Ltd., Quebec City. Steel Plates, by T. G. Elliott of Bab-

cock-Wilcox & Goldie McCulloch, Ltd.,

Pig Iron, by E. E. Ritcey of Dominion Wheel & Foundries, Ltd., Toronto.

Steel Sheets, by Stanley Saunders of General Steel Wares Ltd., Toronto. Tin Plate, by C. C. Callowhill of American Can Co., Hamilton. Tool Steel, by C. H. Randall of Atlas

Steels Ltd., Welland.

Sugar, by H. A. Corriveau of St. Lawrence Sugar Refineries, Ltd., Mon-

Lead and Zinc, by A. Yule of Burgess Battery Co., Niagara Falls.

Canadian Lumber, by O. D. Southwick of National Steel Car Corp., Ltd., Hamilton.

Copper, by D. A. Wilson of Canadian Westinghouse Co., Ltd., Hamilton.

Crude Rubber, by A. C. Kay of Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton.

Commodity Discussion, led by Julian G. Davies.

Banquet

Chairman, John Stewart of Canadian Ice Machine Co., Ltd., President of the Toronto Association.

Address: "Fellowship or Followship," by Frank Dowsett, Advertising Manager of Gutta Percha & Rubber, Ltd., To-

Entertainment.

KANSAS CITY—Stag outing of the Kansas City Association, at Vic Schutte's Lake Lotawana Ranch.

OCTOBER 7

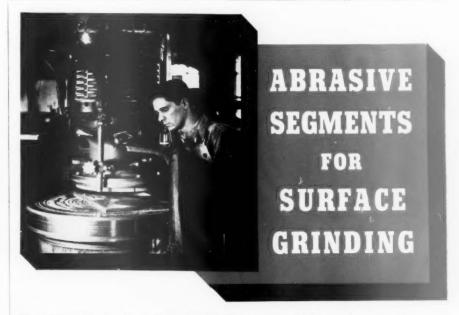
HOUSTON-Luncheon meeting of the Houston Association, at the Rice Hotel. Sound film, "Always Trust a LifeGuard," shown through courtesy of Goodyear Tire & Rubber Co.

OCTOBER 8

MILWAUKEE-Dinner meeting of the Milwaukee Association, at the Elks Club. Speaker: Prof. Lee. H. Lawrence, "World Events and Their Effect Upon Our Economic Life." The meeting was preceded by a commodity forum discussion. There was a demonstration of fluorescent lighting fixtures for office and commercial use, by the Westinghouse Electric & Supply Co.

ROCKFORD-Dinner meeting of the Rock River Valley Association, at the Faust Hotel. Speaker: Franklyn Hobb. of Chicago, business analyst, "Let's Talk Business." Association members presented commodity reports on steel, nonferrous metals, lumber, coal, coke, fuel oil, shipping containers, castings, scrap materials, and chemicals.

NEW YORK-Dinner meeting of the Metropolitan Purchasers' Assistants Club, at Midston House. Speaker: John D. Leeson of the Radiotron Division, RCA Mfg. Co., and President of the New York Association, "Some Posstbilities and Responsibilities of the Purchasing Department." Motion picture showing the development of Bakelite and the wide range of today's applications.



Fast stock removal . . . superior finishes . . . long life . . . these are features regularly obtained with Abrasive Company Segments. Use them for economical surface grinding on machines of the Blanchard and Pratt & Whitney types. They are made in vitrified, silicate and resinoid bond process in grain and grade combinations best suited to your job.

Here's how they performed in one typical case: A prominent metal-body maker uses 18" Blanchard Surface Grinders with abrasive segments in chuck surfacing all kinds of body dies, including high carbon high chrome steels and gray iron castings. Using Abrasive Company B7 BOROLON (aluminum oxide abrasive) vitrified bonded segments,



Forum on purchasing policies and procedure.

TULSA—Closed dinner meeting of the Tulsa Association. Discussion of the proposed simplification program for sucker rods. The idea was endorsed in principle by the Oil Company Buyers Group of N.A.P.A. at the June convention. This meeting received detailed suggestions and crystallized sentiment from the consumer angle.

INDIANAPOLIS—Luncheon meeting of the *Indianapolis Association*, at the Severin Hotel. Speaker: F. G. Malbeuf, city sales manager of the American Air Lines, Inc., "Development of Commercial Aviation."

HAMILTON, OHIO—Plant visits of the *Cincinnati Association*, at the Champion Paper & Fibre Co., and the Black-Clawson Co., followed by a dinner meeting at the Anthony Wayne Hotel.

VANCOUVER—Dinner meeting of the British Columbia Association, at the Hotel Vancouver. Speaker: W. L. Macken, President of the Fraser Valley Milk Producers Association, "Progressive Development in the Evaporated Milk Industry." Scenic motion pictures were shown. Letters were read from the Association's two members in active military service—Major Clarence Baker, who is with the artillery in England, and Captain Frank Barbour, now stationed in Iceland after seeing action at Narvik.

CHATTANOGA—Dinner meeting of the *Chattanooga Association*, at the Hotel Patten. Speaker: Prof. James R. Young of the University of Chattanooga, "Future Buying Policies."

SAGINAW—Dinner meeting of the Saginaw Valley Association, at the Elks Club. Speaker: Joseph W. Ramsey, Regional Director for the Social Security Board, Saginaw, who spoke on the work of his office.

OCTOBER 9

KANSAS CITY—Dinner meeting of the Kansas City Association, at the Hotel President. Motion picture, "Romance of Wire Rope," showing operations at the plant of the Union Wire Rope Corp., with explanatory talk by Walter Voightlander of that company. Commodity discussion.

springfield, ohio—Dinner meeting of the Springfield Association, at the Shawnee Hotel. Commodity discussion, led by Frank Brady of Robbins & Myers, Inc., and Arthur Stoll of The Delscamp Paint & Glass Co. L. G. Yeuell of the Olan Mills Corp. was introduced as a new member.

NIAGARA FALLS—Dinner meeting of the *Buffalo Association*, at the Hotel Niagara. Speaker: Donald G. Clark, Director of Purchases, Gulf Oil Corp., Pittsburgh, "Purchasing Policies Today."

OCTOBER 10

Los Angeles Association, at the Elks Club, with program in charge of the Educational Committee. Guest speaker: Dr. E. M. Eriksson of the University of Southern California, "The Monroe Doctrine and the European War." Commodity discussions were led by various members, as follows: Ray Geiler on chemicals; William Shaw on building materials; W. B. Reeder on textiles; Ray Imhoff on non-ferrous metals; J. W. Frasche on rubber; Harry Kiester on cils and fuels; Thomas Crawley on pulp and paper; Cecil Guthrie on iron and steel.

CHICAGO-Dinner meeting of the Chicago Association, at the Hotel Sher-The program featured a University of Chicago Round Table discussion on the topic, "Trends of the Future Affecting Purchases." Those participating were Dean William H. Spencer of the School of Business, Neil H. Jacoby, Assistant Professor of Finance, and W. Stone, Professor of Industrial Relations. The Association has announced the appointment of H. A. Hoover as legal counsel. Mr. Hoover will speak regularly at the monthly meetings on current or pending legislation, decisions, rulings, etc., which affect purchasing.



BROWN & SHARPE TOOLS



IT'S worth a lot to know that you can rely upon Scully always to fill orders in a hurry—whether they are regular orders or for emergency use.

Small orders, big orders, regular orders, rush orders—we treat them all alike. Every one of our eight warehouses operates on the same principle—that our customers want to feel that when they need steel, steel products, copper and brass, all they have

to do is, "call Scully and relax."

Many years of careful attention to customers' needs has built up an enviable reputation for Scully Service. Huge stocks are on hand at 8 conveniently located warehouses—ready for quick delivery. Why not try us next time? Phone, write or wire the warehouse nearest you. And ask for a free copy of the Scully Stock List and Reference Book.

We are prepared...

Now, when quick delivery is more important than ever, it pays to call Scully. Huge stocks on hand—including Cold Finished Bars, Bar Steel, Stainless Bars, Hot and Cold Rolled Alloys.



SCULLY STEEL PRODUCTS COMPANY

Distributors of Steel, Steel Products, Copper and Brass

Warehouses at CHICAGO ST. PAUL-MINNEAPOLIS NEWARK, N. J.

ST. LOUIS

BOSTON

UNITED STATES STEE

SAN FRANCISCO—Luncheon meeting of the Northern California Association, at the Palace Hotel. Speaker: Dr. Howard McKinley, Commissioner of Civil Service, City and County of San Francisco, "Naval Defense of the Pacific, and the Specific Need of the San Francisco Area."

DAYTON—Dinner meeting of the Dayton Association, at the Engineers Club. Speaker: Charles Conley, general manager of Stolle Bros. Corp., "New Developments in Plating, and What to Expect When Purchasing Plating."

SPRINGFIELD—Dinner meeting of the Western Massachusetts Association, at

the Hotel Sheraton. Speaker: Col. Douglas B. Wesson, U. S. Army Ordnance Department, "Production for Preparedness."

FORT WAYNE—Dinner meeting of the Fort Wayne Association, at the Chamber of Commerce, Gerald R. Smith of the Indiana Service Corp., association president, outlined plans for the year. Dr. J. W. Bowers showed motion pictures taken on a Canadian hunting trip.

OCTOBER 11-12

DALLAS—Regional meeting of Public Utility Group, District No. 2, Southwestern Purchasing Agents, at the

Adolphus Hotel. Chairman, Q. C. Shores of Arkansas Power & Light Co., Pine Bluff, Ark.

Morning Session

Address: "Speeding Up Handling of Appliance Repairs," by Harry C. Loehr of Central Power & Light Co., Corpus Christi, Texas.

Discussion, led by Oscar Henenberg of Texas Power & Light Co., Dallas, and J. H. MacBeth of Southwestern Gas & Flectric Co., Shreyeport, La.

Electric Co., Shreveport, La.

Address: "Standardization of Distribution Transformers," by H. K. Doyle,
Chief Engineer of Dallas Power &
Light Co.

Discussion, led by R. J. Orrick of Gulf States Utilities, Beaumont, Texas, and W. R. Heyman of Oklahoma Gas & Electric Co., Oklahoma City.

Luncheon

Plant Visit and Luncheon, at the Mountain Creek steam electric station of the Dallas Power & Light Co.

Afternoon Session

Address: "Establishment of Surplus Material Lists Interchange Methods," by H. Henson of San Antonio Public Service Co.

Discussion, led by Carl Wuerpel of Community Public Service Co., Fort Worth, and R. W. Seipel of Texas Electric Service Co., Fort Worth.

Friday Evening Fellowship Dinner.

Saturday Morning Business Session.

SALT LAKE CITY—Fall meeting of District Council No. 1, N.A.P.A. George P. Locker of Seattle, Past District Vice President, presided in the absence of Vice President W. C. Hubner of San Francisco, due to illness. The Council attended the regular monthly dinner meeting of the Utah Association on Friday evening, being the guests of honor on that occasion.

LANSING—Annual fall council meeting of District No. 4, N.A.P.A., at the Olds Hotel. Frank L. Brown of the Michigan Paper Co., Plainwell, N.A.P.A. Vice President, presided at the sessions. Speakers included George E. Price, Jr., of Akron, and George A. Renard of New York, President and Secretary of the N.A.P.A.

OCTOBER 12

NEW YORK—Meeting of the Eighth District Council, N.A.P.A., at New York Association headquarters. Glenn C. Parsons of Buffalo, District Vice President, presided. The Council members were luncheon guests of the New York Association.

OCTOBER 13

REDWOOD CITY — Annual family picnic of the *Northern California Association*, at Flood Park.



An Important Message To All Industry

USE PAINTCIL FOR MARKING

 Here is the streamlined *improved* method of permanently identifying materials. It's Paintcil — paint in stick form — developed through 4 years of intensive tests, with cooperation of all types of industry.

Handy as a pencil. More economical than liquid paint—more rapidly applied. Weather-proof and permanent.

Write for samples and prices. Furnished in white and many brilliant colors.



HELMER-STALEY, INC.

327 W. HURON ST.

CHICAGO, ILL.

When writing Helmer-Staley, Inc. please mention Purchasing



Hundreds of hidden hazards in every plant are never spotted 'til they strike at eyes. For many a hazard is not caused by the worker's own job. And if eyes are unprotected when their time comes to get in harm's way, then you will pay many times more than you would have paid for Eye-Protection.

Be ready for these inevitable at-

tacks. Armor your workers' eyes with comfortable, good-looking American Goggles . . . fitted with Super Armorplate Lenses that provide the extra impact-strength of deeply arched, curved construction. Have your AO representative plan for you a complete "American Line of Defense" against loss of eyes and profits. WRITE the nearest office NOW.



American Optical Compa

Factories at Southbridge, Massachusetts



OCTOBER 14

BOSTON — 'Thirty-Fifth Anniversary meeting of the New England Association, at the University Club. Speaker: Donald C. McKay, Assistant Professor of History, Harvard University, "International Relationships." Guests of honor included Hon. Leverett W. Saltonstall, Governor of Massachusetts, N. W. Lillie, first president of the Association, and most of his successors in that office, H. L. Ogden, charter member who is still actively engaged in purchasing, also delegations from other Associations in District No. 9. The meeting was preceded by an afternoon conference at which Harry R. Young of the Central Technical Laboratory of the Dupont Co., Philadelphia, spoke on "Some New Developments in Paints for Maintenance Painting.

PORTLAND-Dinner meeting of the Oregon Association, at the Mallory Hotel, followed by an inspection visit to the plant of the Portland Oregonian.

NEW ORLEANS—Dinner meeting of the New Orleans Association, at the Jung Hotel, honoring the past presidents of the organization. Speaker: Major H. P. Agnew, assistant to the Adjutant General, "How the Selective Service Program Works."

PITTSBURGH - Plant visit of the Pittsburgh Association, at the Mellon Institute of Industrial Research, show-

OCTOBER 15

ing experiments in process and facilities for the study and development of new products. The trip was followed by a dinner meeting at the Pittsburgh Athletic Club, where the program was furnished by the Pennsylvania Association for the Blind, featuring a motion picture, "Let There Be Light," with J.

R. Wise as narrator.

NEW YORK-Dinner meeting of the New York Association, at the Builders Exchange Club. Speaker: Dr. Lionel D. Edie, economic consultant, "What I See Ahead for the Purchasing Agent and Business Man." One-minute commodity reports on non-ferrous metals, steel, paper, coal, textiles, fuel oil, industrial chemicals, and paper shipping containers. The meeting was preceded by an afternoon forum on "Sources of Supply," led by Benedict Van Voorhis. The Association announces the appointment of Prof. Ralph E. Alexander of the Marketing Department, Columbia University, as advisor on commodities.

ST. LOUIS-Dinner meeting of the St. Louis Association, at the Hotel York. Speakers: E. W. Latourette, district manager of Underwood-Elliott-Fisher Co., "Fifth Column Activities in St. Louis"; Forrest Smith, State Audi-"The Revised Missouri State Sales William Krueger led a round table discussion on commodities and market trends.

COLUMBUS-Dinner meeting of the Columbus Association at the Maramor. Speaker: Major Mark Reedall, Cleveland Ordnance Depot, U. S. Army, "Defense Buying, Contracts, and Industrial Cooperation.

SOUTH BEND-Dinner meeting of the South Bend Association, at the Hotel LaSalle. Commodity discussion, led by J. M. McCarthy (tung oil), A. E. Gardner (leather), and E. L.

ERIE—Dinner meeting of the *Erie Association*, at the Barn. Speaker: William M. Rooney, managing editor of the Daily Metal Trade, Cleveland, "Market Trends with Especial Reference to Steel.'

LOUISVILLE-Dinner meeting of the Louisville Association, at the Kentucky Hotel. Speaker: Charles W. Williams, Professor of Economics, University of Louisville, "The Business Outlook." W. T. McCutcheon led a round table discussion on "Procedure of Changing Sources of Supply.'

OCTOBER 16

SAN FRANCISCO—Thirteenth Annual Pacific Purchasor Advertisers' Exposition, sponsored by the Northern California Association, at the Palace Hotel. The exhibit was open for inspection all day, comprising a highly attractive and educational display of industrial mate-



Roper offers you 8 series of pumps with capacities ranging from one to 1000 gallons per minute . . . pressures up to 1000 pounds per square inch . . . speeds up to 1800

r.p.m. . . . 21 different drives and mountings . . . 8 different piping arrangements . . . a pump for every purpose in the design best adapted to fulfill your particular needs with the highest degree of efficiency.

Send us your specifications and get detailed information on the new improved line of Roper Hydraulically Balanced Pumps.

Write for Catalog 937 or see our catalog in Sweet's.

GEO. D. ROPER CORP., ROCKFORD, ILLINOIS



THIS K & M INSULATION AS EFFICIENT AS EVER AFTER 17 YEARS' MAINTENANCE-FREE SERVICE OUTDOORS



Above—View at the Natrona, Pa., plant of Pennsylvania Salt Manufacturing Co. showing part of the 24" steam line that was insulated in 1923 with K&M "Featherweight" 85% Magnesia. At right is shown the connection of the steam line at the turbine.

The 24-inch steam line shown in the illustration runs from turbine to evaporator at the Natrona, Pa., plant of the Pennsylvania Salt Manufacturing Company. Its total length is 430 feet, of which 220 feet are outdoors. Its insulation of Keasbey & Mattison "Featherweight" 85% Magnesia was applied in 1923.

This insulation has spent the last 17 years conserving heat as efficiently as the day it was installed. It has been subjected to sizzling sun and freezing cold, to rain and snow and all the other weather 17 years will bring. Yet not a cent has been spent for maintenance, and it is ready to fight the elements for more decades to come.

K&M "Featherweight" 85% Magnesia, famous as one of the most efficient heat insulators ever developed for temperatures up to 600° F., is but

one of a complete line of Keasbey & Mattison products, specialized for every insulation purpose. They are saving heat, fuel and dollars in plants the nation over.

K&M engineers, working with K&M Distributors strategically located throughout the country, can point the way to real savings in your plant, too. Write Dept. 11 for full details.

K&M "Featherweight" 85% Magnesia

KEASBEY & MATTISON

COMPANY, AMBLER, PENNSYLVANIA

When writing Keasbey & Mattison Company please mention Purchasing

To lower POWER BIT Costs... buy APEX

When you buy Power Bits, you are just buying service—so many thousand screws driven before the Bit is worn out.

And that's all APEX is trying to sell you—service in driving more screws, and Plus Value by reconditioning Apex - Phillips Bits for additional service.

An APEX - Phillips reconditioned Bit has the same quality, and will give the same service that it did originally. Thus, you see, the same Bit can be used time and time again before discarding. The nominal charge for reconditioning represents a substantial saving.

Many of the largest companies maintain a revolving supply of APEX-Phillips Power Bits. As Bits wear out, they are returned. These are replaced with reconditioned APEX-Phillips Bits sent in previously.

The investment in Phillips Power Bits is thus kept at the minimum; there is no loss of time in making replacements, and again APEX Service lowers Power Bit costs.

If you didn't know about this service, write us and we will explain it in detail.

Phillips License No. 2 Patent Nos. 2046837-38-40

The APEX MACHINE & TOOL CO.

Dayton, Ohio

rials and supplies, in the Concert Room of the hotel, and in adjoining parlors and corridors. There was a joint luncheon with the San Francisco Advertising Club, at which Frank P. Foise of the Waterfront Employers' Association discussed, "What Industry Has Accomplished and Is Further Planning in Order to Harmonize Employer and Employee Relationship on the Pacific Coast." The Eighteenth Annual Advertisers' Dinner was held in the evening, with a special entertainment program.

The exposition was in charge of the publication committee: Louis A. Colton, Chairman, W. C. Figroid, R. E. Brock, A. Craig, H. W. Heintz, L. L. Shafer,

S. Varanzoff, J. Cowie, D. S. Glasgow, J. D. Schwartz, and W. B. Van Horn, Jr. Herbert S. Tanner served as Assistant Manager of the exhibit.

CANTON—Dinner meeting of the Canton & Eastern Ohio Association, at the Elks Club. Speaker: Bert E. Froehde, President of the Canton Chamber of Commerce, "The Relation of the Chamber of Commerce to Industry and National Defense.

OCTOBER 17

CLEVELAND—Plant visit and dinner meeting of the Cleveland Association, at



ACHIEVEMENT of the customer's GOODWILL through SERVICE — that is the aim of the Accurate Spring Mfg. Co. in every dealing with users of springs. That this goodwill is being gained, that Accurate customers are well served can be seen in the rapidly growing list of Accurate customers — customers who are disposed to return again and again to Accurate for their Spring requirements.

Join this list of Accurate customers. Come to Accurate for springs, wire forms, stampings — small or large orders, standard or specially designed parts. You'll get prompt cooperation from our sales, engineering and production departments—you'll be so truly well served that you will surely return.

FREE
HANDBOOK
Full of usable, otherwise hard to find spring data—compiled in convenient form for you by Accurate.
Write for your copy today.



ACCURATE SPRING MFG. CO. 3825 W. Lake St. • Chicago, III.

CUT ASSEMBLY COSTS



Manufacturers in many industries report assembly cost savings up to 50% and more through use of these cost-

cutting fastenings that not only reduce driving time. but provide greater holding power and resistance

against vibration.

As driver or bit will not jump or slip from screw, the use of electric, pneumatic and spiral drivers now permits faster, safer driving even when assembling parts already finished. Use HOLTITE-Phillips Recessed Head Screws—you'll see the difference in your cost sheets.

Send Samples or Specifications of requirements for estimate Special Parts and Fastenings made exact to specifications Specials of an upset nature, threaded if desired, rolled or cut, from most any type metal—also second operations.

New Bedford, Mass... Warehouses at Detroit & Chattanooga

Do your men reeve tackle blocks correctly

- AND SAVE YOUR COMPANY'S MONEY?

INCORRECT METHODS CAUSE UN-NECESSARY STRAIN, FRICTION, AND WEAR ON YOUR ROPES — AND BLOCKS,



A WORD OF CAUTION

In reeving tackle blocks, the tendency to twist may be overcome by the following method—

In reeving a pair of tackle blocks one of which has more than 2 sheaves, the hoisting rope should lead from one of the center sheaves of the upper block. When so reeved the hoisting strain comes on the center of the blocks and they are prevented from toppling, with consequent injury to the rope by cutting across the edges of the block shell. In order to reeve by this method, the 2 blocks should be placed so that the sheaves in the upper block are at right angles to those in the lower one.



Send for a copy of our new booklet— "Lift it Safely"

PLYMOUTH CORDAGE COMPANY

North Plymouth, Massachusetts and Welland, Canada Division Offices—New York, Chicago, San Francisco Warehouse Stocks—New York, Boston,

Warehouse Stocks—New York, Boston, Baltimore, Philadelphia, Cleveland, Chicago, Houston, San Francisco

PLY MOUTH
THE ROPE YOU CAN TRUST

the Westinghouse Electric & Mfg. Co. Among the processes seen were the manufacture of commercial, industrial and flood lighting equipment, varied types of airport lighting, and the Precipitron, an electrostatic air cleaner. Representatives of the company spoke at the dinner meeting on fluorescent lighting, protective flood lighting, and the Precipitron.

BIRMINGHAM—Luncheon meeting of the Birmingham Association, at the Redmont Hotel. Speaker: Harry Moust, "The Fine Points of Football."

LOS ANGELES-Plant visit and lunch-

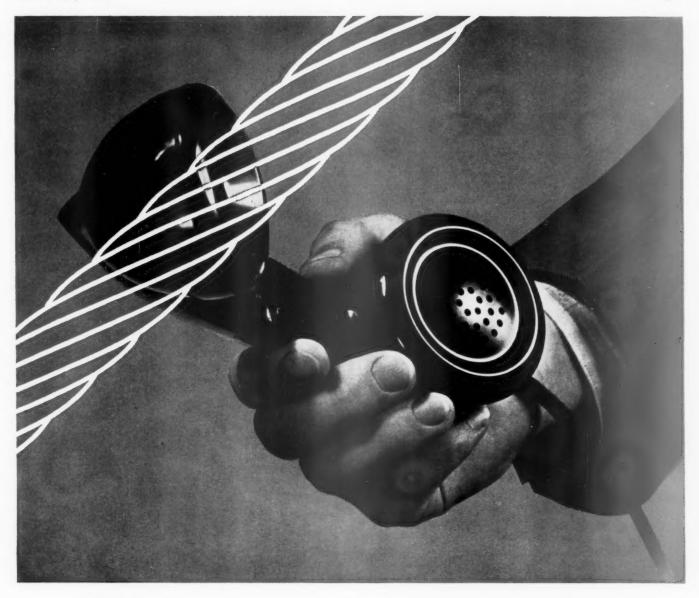
eon meeting of the Los Angeles Association, at the Western Lithograph Co., as guests of Fred T. Ashley, Purchasing Agent of the company.

HOUSTON—Luncheon meeting of the Houston Association, at the Rice Hotel. Speaker: Val Jean McCoy, Professor of Economics, University of Houston, "The Economic Effect of the Defense Program."

OCTOBER 18

PORTLAND—Luncheon meeting of the Oregon Association, at the Mallory Hotel. Speaker: Alfred P. Kelley, Com-





As near as your TELEPHONE

BETHLEHEM WIRE ROPE

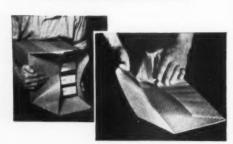
There are 260 Bethlehem Wire Rope Distributors in key supply points in all parts of the United States. Regardless of where you yourself are located—city, oil field, timber tract, seaport, quarry or mine—there's a Bethlehem distributor within convenient 'phoning distance. Call him the next time you need top-quality wire rope and prompt, efficient service.



BETHLEHEM STEEL COMPANY

It's 5 to 1 You'll SAVE with CORROFLEX

flexible-cushion
Speed-Packing
MATERIAL



Four out of five companies that have tested Corroflex are buying Corroflex today! And that's the best proof that Corroflex does a BETTER JOB... SAVES WEIGHT... SAVES MATERIAL COSTS... SAVES TIME.

Corroflex has strong corrugations plus patented "Spring board" cushioning . . . gives extra protection in shipping. Like "Cartons in Rolls", Corroflex provides the exact pack for every package. Flexible . . . easy to handle. Ideally suited to a great range of packing needs.

Free Trial Offer TEST CORROFLEX AT OUR EXPENSE

Compare Corroflex "Speed-Packing" with your present methods and find out how much you can save. Send for free sample roll, photographic bulletins on time-and-money-saving SPEED-PACKING, plus new automatic pencil with "fingertip" table of parcel post rates. No obligation.

SHERMAN PAPER PRODUCTS

CORPORATION
DEPT. P-11 NEWTON UPPER FALLS, MASS.
Yes, I'd like to give Corroflex an actual
test. Send me the free sample roll and
free aids to shipping room economy.

Name	
Company	
Address	-

mander of the Department of Oregon, American Legion, "Counter Espionage and Its Relation to National Defense."

TOLEDO — Dinner meeting of the *Toledo Association*, at the Toledo Yacht Club. Speaker: William C. Craig, Professor of Public Speaking, Capital University, Columbus, "Why We Laugh."

TACOMA—Conference of the *Pacific Northwest Public Buyers*. The program included a joint luncheon meeting with the Young Men's Business Club at the Hotel Winthrop, followed by business sessions at the Elks Temple. Featured speaker was Col. Wayne Allen, Purchasing Agent and Chief Administrative Offi-

cer for Los Angeles County, who was accompanied by Roger W. Jessup, Chairman of the Los Angeles County Board of Supervisors. The local committee in charge of the conference consisted of B. R. Nichols, Tacoma City Purchasing Agent, A. M. Angrove, Assistant Purchasing Agent, and Thomas Spencer of Tacoma School District No. 10.

OCTOBER 21

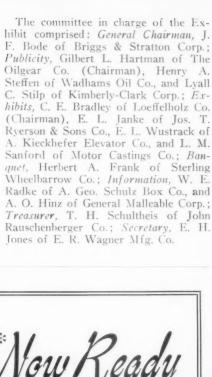
HOUSTON—Luncheon meeting of the Houston Association, at the Rice Hotel. Sound film, "Screw Drivers of 1940," shown through courtesy of Shell Oil Co. and under supervision of the Texas State Highway Patrol.



THE THOMAS STEEL CO.
SPECIALIZED PRODUCERS OF COLD ROLLED STRIP STEEL
WARREN, OHIO

OCTOBER 22-23

MILWAUKEE — Fourth Industrial Products Exhibit sponsored by the Milwaukee Association, at the Schroeder Hotel. One hundred and six manufacturers of industrial products, supplies and equipment were represented by informative displays of special value to the hundreds of Purchasing Agents, Management and plant executives, engineers, superintendents, foremen and inspectors who crowded the exhibit floor during the two-day showing. George A. Renard, Executive Secretary of the N. A. P. A., New York, was the principal speaker at the banquet session on Tuesday evening, discussing national conditions in industry.





Now Ready OUR NEW 1941 CATALOG

Illustrating Hundreds of New Gifts

DIAMONDS
WATCHES
JEWELRY
SILVERWARE
ELECTRIC
APPLIANCES
LEATHER GOODS
TROPHIES
RADIOS

GIFTWARES

For 29 years Purchasing Agents of leading firms have found our catalog an economical source for gifts for customers and employees.

*If your copy does not arrive by November 25th write us on your business letterhead.

L. & C. MAYERS CO.

ESTABLISHED 29 YEARS

IMPORTERS · MANUFACTURERS · DISTRIBUTORS

545 FIFTH AVENUE, NEW YORK 170 BROADWAY, NEW YORK

ALSO PHILADELPHIA · BUFFALO · ALBANY · HARTFORD



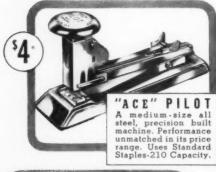
when you buy casters—buy BASSICK

Long-lasting, quality casters in the correct size and type for each specific need—made by the world's largest manufacturer of casters and floor protection equipment.

THE BASSICK COMPANY
Bridgeport Connecticut

Canadian Factory
STEWART WARNER ALEMITE CORP









ACE STAPLE REMOVER

Saves your finger-nails ...prevents torn papers. Every stapling machine operator should have one.



*EAST OF ROCKIES

ORDER FROM YOUR STATIONER

ACE FASTENER CORPORATION
Makers of the World's Best Stapling Machines
3415 N. Ashland Ave. Chicago, Ill.

OCTOBER 22-23-24

BALTIMORE—Fifth annual Manufacturers' Products Exhibit sponsored by the Baltimore Association, at the Lord Baltimore Hotel. Ninety attractive booths in the ballroom and adjoining parlors presented an interesting and informative display of latest developments in factory and office equipment, commanding the close attention of a large attendance of buyers and production men.

At the Exhibitors Breakfast on Wednesday morning, there were talks by Baltimore's Mayor Howard Jackson and by Larry Nixon of the New York Telephone Co. The following awards were announced: Most Informative Exhibit, James J. Lacy Co.; Honorable

Mention, Willson Products, Inc., represented by Carey Machinery & Supply Co. Most Decorative Exhibit (National Classification), Chase Brass & Copper Co.; Second Award, Hygrade Sylvania Corp. Most Decorative Exhibit (Local Classification), Baltimore Stationery Co.; Second Award, The Gibson & Kirk Co. The committee on awards consisted of P. T. Blogg of Alpha Photo-Engraving Co., Herbert Fallin, Budget Director of the City of Baltimore, and W. W. Pagon, Consulting Engineer.

The committee in charge of the Exhibit was as follows: General Chairman, Frank H. Carter of The Maryland Drydock Co.; Vice Chairman, J. Herbert Gaston, City Purchasing Agent; Traffic, Morton S. Busick of Lord Baltimore Hotel and G. M. Neukam of Pen Mar

IF YOUR BUSINESS JUSTIFIES THE COST OF MECHANICAL ACCOUNTING



IT NEEDS THE EFFICIENCY OF

WESTON'S MACHINE POSTING LEDGER and INDEX

Two papers made by Weston, the ledger paper specialists, expressly for machine bookkeeping card records and forms. Available through your printer, form supplier or distributor of Weston papers.

Ledger

For Forms. One-way grain direction makes forms stand straight—special finish is smudge-proof, clean erasing—forms are easier to sort and file. Made in Buff, subs. 24, 28, 32 and 36; in Green, subs. 24 and 32; and in White, Blue and Pink, sub. 32. 50% cotton content.

Index

For Cards. Its ledger finish provides excellent writing, erasing and typing qualities. Tabs retain their snap. Made in Buff, White, Blue, Ecru, and Salmon in 180 M, 220 M, 280 M and 340 M; in Green, Fawn, Cherry and Canary in 180 M and 220 M; and in Pink 180 M (basis 25½ x 30½). 50% cotton content.

DO YOU BUY PAPER? Then you should read Weston's Papers, a publication packed with news and information of interest to paper buyers. To receive copies regularly, write

BYRON WESTON COMPANY, DALTON, MASS., Dept. H

OF

tion

Co., Inc.; Booth Reservations, C. B. Sherman of New Amsterdam Casualty Co.; Breakfast, T. B. Athey of Works Progress Administration and A. H. Schultz, Jr., of Revere Copper & Brass, Inc.; Attendance, L. L. Childs of Burns Bottling Machine Works.

OCTOBER 22

OAKLAND—Luncheon meeting of the East Bay Group, Northern California Association, at the Lake Merritt Hotel. Speaker: McKew Parr of the Parr Electrical Export Corp., New York, "Conditions in the Far East."

WALLINGFORD—Dinner meeting of the *Connecticut Association*, at Oakdale Tavern. Speaker: Carl A. Gray,

President of Grenby Mfg. Co. and member of the Connecticut Joint Executive Defense Commission, "What Connecticut Industries Are Doing for the Preparedness Program."

OCTOBER 23

ROCHESTER—Dinner meeting of the Rochester Association, at the Rochester Club. Forum discussion of purchasing problems and policies, led by Sidney Curtis of Stromberg Carlson Tel. Mfg.

OCTOBER 24

SCHENECTADY — Dinner meeting of the *Eastern New York Association*, at the Mohawk Golf Club. A discussion of proposed revisions to the Association

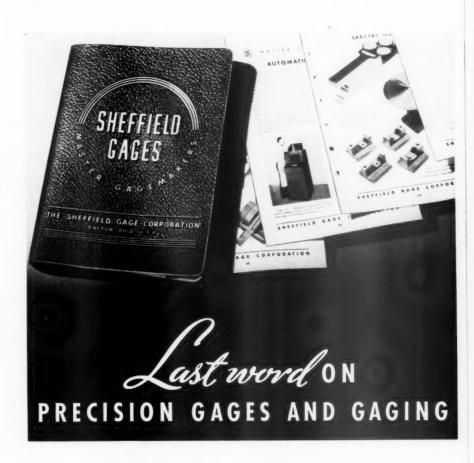
CRANE'S PAPERS

ARE

PARTNERS

IN DISTINCTION

AND DURABILITY



"SHEFFIELD GAGES" just off the press is a comprehensive presentation of precision gages—design, construction and application together with standards and constants useful in practical inspection work.

Manufacturers engaged in the manufacture of engines, machine tools, automotive or military equipment, or any enterprise where inter-changeability of parts is essential, will find this book very useful.

White for your own copy on your own letterheod no obligation.

THE SHEFFIELD GAGE CORPORATION 1527 EAST THIRD STREET

DAYTON, OHIO, U.S.A.

, OIIIO, 0.5. A.



Paper is partner to all written words. The better the paper, the better the partnership; the more weight your words carry; the more respect your letters command. For this important partnership, leading executives, business houses, banks choose Crane's Papers for their all-rag quality and durability. Crane's Papers cost little more; return many times their cost in prestige and profit. We invite you to write for samples of Crane's Fine Papers with envelopes to match.

Grane's
FINE PAPERS

MADE IN DALTON, MASSACHUSETTS
SINCE 1801

SAY WHEN! ... I deliver Rush orders on the dot!



Here's speed...plus! AIR EXPRESS whizzes through the skyways at three miles a minute, and gets those orders where you want them, when you want them! Overnight service connects 235 key cities from coast to coast and to 23,000 other points by fast rail connections. Also international coverage...Latin America, Alaska, Hawaii, Australasia, and the Far East. Special pick-up, special delivery. A phone call to RAILWAY EXPRESS, AIR EXPRESS Division, brings prompt service.



The new STAR Unbreakable Special Flexible Hack Saw Blade is from every angle-different in looks, different in performance, different in heat-treatment, different in steel.

PERFORMANCE—Extreme flexibility with outstanding toughness result from the use of a new kind of steel and heat treatment. The new STAR Unbreakable Special Flexible is guaranteed unbreakable in use in a frame -no blade loss due to bending, twisting, or cramping. It is a flexible blade with the qualities of an all-hard blade-lasting cutting qualities with no teeth strippage.

METALLIC FINISH-For the first time a tungsten blade is colored all overnot only with a protective (patented) metallic finish to prevent rusting, but with a distinctive green finish to provide immediate customer identification and sales display value. Only the green blade is a STAR Tungsten

COMPLETE SPECIFICATIONS—For the first time on any tungsten blade the length, number of teeth, type, make, thickness and width are plainly stamped in clear marking. This helps in proper blade selection in selling-as well as during use.

BETTER IN USE-Here is a new blade, unsurpassed for flexibility and toughness, with an improved finish, having clear marking, and packed* in the exclusive STAR modern metal box lithographed in colors-no wonder we can say it's better in use,



STAR pioneered with the first "Moly" blade with the all-over copper finishnow STAR leads with the first tungblade with an all-over green finish

HACK SAW BLADES

CLEMSON BROS., INC., MIDDLETOWN, N. Y.

Tungsten and "Moly" Hand and Power







STAR

SPECIAL FLEXIBLE

CLEMSON

BROS

lnc.

constitution took place. Golf privileges of the club were made available to the purchasing group during the day.

SAN FRANCISCO-Luncheon meeting of the Northern California Association, at the Palace Hotel. Speaker: Eugene T. Frickstad of The California Ink Co., "Manufacturing of Printing Inks and Dry Colors.

DETROIT-Dinner meeting of the Detroit Association, at Webster Hall. Speaker: Col. George A. Drew of Toronto, "Canada at War."

ELMIRA—Dinner meeting of the *El*mira Association, at the Mark Twain Hotel. Speaker: C. G. Bunnell, Purchasing Agent of the Westinghouse Electric & Mfg. Co., East Pittsburgh, "Association Values."

BIRMINGHAM-Luncheon meeting of the Birmingham Association, at the Redmont Hotel. Speaker: E. J. McCrossin, Chief of the Division of Safety and Mine Inspection, State of Alabama, "Mine Inspection."

LOS ANGELES-Luncheon meeting of the Los Angeles Association, at the Chamber of Commerce. "Information Please" program, in charge of E. H.

SEATTLE-Luncheon meeting of the Washington Association, at the Washington Athletic Club. Speaker: Frank Elliott of Henry W. Peabody & Co., London, "Experiences Buying for Great Britain.

OCTOBER 29

TULSA-Eighth annual Executives Night dinner meeting of the Tulsa Association, at the Tulsa Club. Speaker: Stuart F. Heinritz, Editor of Purchasing, New York, "National Defense-Our No. 1 Procurement Job.

OAKLAND-Luncheon meeting of the East Bay Group, Northern California Association, at the Lake Merritt Hotel. Speaker: O. F. Snedigar, Probation Oificer, County of Alameda, "Juvenile Delinquency.'

OCTOBER 31

SAN FRANCISCO—Luncheon meeting of the Northern California Association, at the Palace Hotel. Speaker: Ralph N. Jacobson of Rotometals, Inc., a past president of the Association, "Metals."

L. A. PURCHASING DEPARTMENT IS REORGANIZED

Announcements have been received concerning a reorganization of the purchasing department of Los Angeles County, California. Col. Wayne R. Allen heads the department, holding the dual position of Purchasing Agent and

County Manager. The former position of Chief Assistant Purchasing Agent, recently vacated by the death of W. R. Cortright, will not be filled. Instead, the second ranking position will carry the dual title of Assistant Purchasing Agent and Manager of County Stores. J. W. Hughes of San Gabriel has been appointed to this post. Third ranking position is the newly created post of Assistant Purchasing Agent. J. M. McCool has been temporarily appointed to this position pending the filing of applications and a permanent appointment.

The offices of the complete purchasing department are to be moved to a new building, now under construction by the WPA at 1660 Eastlake Avenue, bringing the stores and purchasing departments together, at an estimated saving of \$15,000 a year in overhead.

THE PRESERVATION OF BUSINESS RECORDS

A new and revised edition of the pamphlet, "The Preservation of Business Records," has just been issued by the Business Historical Society, Copies are available for free distribution, and may be obtained by addressing the Society at Baker Library, Soldiers Field, Boston, Mass. Originally published in 1937, two complete printings were quickly exhausted, and the study has been out of print for some time. A continuing demand from business firms and libraries has led to the preparation of this new edition. The author-Ralph M. Hower, Assistant Professor of Business History at the Harvard Graduate School of Business Administration-has taken advantage of this opportunity to incorporate suggestions from business firms who used the earlier edition, and to add new and up-to-date information.

The subject is treated under four main headings:

- (a) Why business records should be preserved.
- (b) What material should be selected for preservation.
- (c) How records should be preserved.
- (d) When systematic preservation of records should be undertaken.

Besides presenting the basic principles governing the formulation of a policy of preservation and destruction of business records, the study is detailed and specific. It covers methods which may be put into operation, and points out for each particular department of the business what ledger and summary accounts embrace the essential details of original records so as to avoid undue duplication in the permanent record. It sets up a schedule which can be economically adopted by most firms in undertaking such a program.

A 22-page appendix cites the actual practice in representative companies in a variety of selected fields, including an advertising agency, a commercial bank, a department store, a retail and wholesale grocery, a life insurance company, three types of manufacturing companies (fabricated paper products, woolen tex-





GUARDIANSHIP

Vigilant, resolute, ready for action, The Guardian of the Archives at Washington, D. C., well typifies the qualities and character of Panama and Beaver products.

Manufactured by
MANIFOLD
SUPPLIES
COMPANY
Nationwide
Distribution

Identified
Ink and Fabric
Products of
Superlative
Utility and
Quality

BEAVER

When writing advertisers please mention Purchasing

Insulations that Excel

Irvington pioneered in the manufacture of seamless bias varnished cambric tape.

This advance enables a saving in material, a better-looking and better-insulated job, and the application of bias tape with taping machines.

Research and development still keep IRVINGTON Varnished Cambric and Tape at the top.

Irvington standard materials meet most requirements ordinarily encountered. Special materials manufactured to order where quantities warrant consideration.





Other Irvington Insulations include Varnished Fiberglas, Duck, Silk and Paper: Varnished and Extruded Plastic Tubings: Composite Slot Insulation: In-sulating Varnishes: Protective Paints and Enamels: Oli Stop: Coil Sealing Insula-

IRVINGTON VARNISH & INSULATOR CO.

IRVINGTON, NEW JERSEY, U.S. A.

tile machinery), two types of public utilities (electric power, and telephone), a railroad, and the Boston Stock Ex-

Altogether it is an exceedingly useful study, a pamphlet designed to fit the needs of a busy executive who wants to hand over to his subordinates the problem of record preservation and storage space, along with the answers to the basic questions.

GULF. MOBILE & OHIO

A new trunk line railroad of 2,000 miles, known as the Gulf, Mobile & Ohio, has been formed through the merger of the Gulf, Mobile & Northern with the Mobile & Ohio. Headquarters of the new organization are at Mobile, Ala. The supply department is headed

Hermon E. Warren, Manager of Purchases and Stores, Mr. Warren has served both roads, starting his railroad career in 1903 as an office boy in the dining car department of the M. & O. He has been Manager of Purchases and Stores for the G., M. & N. since January,

Agent of the M. & O. since April, 1920.

G. M. Wahl is Assistant Purchasing Agent, and G. H. Therrell is General

SUPPLY DEPARTMENT

by the following:

1921 Walter J. Diehl, Purchasing Agent. Mr. Diehl has been in railroad work since 1895, starting in the mechanical department of the Lake Shore & Michigan Southern. He has been Purchasing

Storekeeper.

PLANTS AT IRVINGTON, N. J. and HAMILTON, CANADA Representatives in 20 Principal Cities

this MODERN makes ONLY non-ferrous HARPER and stainless fastenings PLANT



ONE COMPLETE manufacturing unit that manufactures Bolts, Nuts, Screws and Washers out of everything except iron and steel has the largest stock in the country.

Cap Screws of BRASS, Lag Screws and Hanger Bolts of BRONZE, Bolts and Screws in EVER-DUR, Washers, Rivets and Nuts of MONEL and most every type of STAINLESS fastenings you could

That's the story—3600 STOCK ITEMS in every alloy except iron and steel and plenty of production equipment to make those small troublesome specials you need right

Send for the 72-page Harper Cat-alog — "Bible" of the non-ferrous and stainless fastening industry. The H. M. Harper Company, 2606 Flet-cher St., Chicago.

HARPER Chicago



NEW ORLEANS BUYERS OFFER AID IN STATE REORGANIZATION

The Purchasing Agents Association of New Orleans, through President Emile L. Morvant, has offered its cooperation and services in the organization of a centralized purchasing department for the State government. Plans for such a department were included in Governor Jones' platform, the purchasing agency to operate under the direction of the State Finance Committee. To date no definite steps have been taken to organize a purchasing department, but Mr. Morvant cites legal opinion to the effect that Finance Director Martin Close can proceed with the organization at any time.

"Approximately one third of the State's appropriations are spent on purchases, with each department buying separately and no attempt at coordinating buying and effecting the economies that attend large purchases," Mr. Morvant stated. "Savings of approximately 15% have been made on the average by application of modern and efficient centralized purchasing in the 37 states and more than 350 counties that have adopted the procedure."

He listed fourteen major principles embraced in the buying program of virtually all large scale industrial and commercial enterprises, summarizing

2216-18 W. 63rd St., Cleveland, Ohio

ORIGINATORS OF STEEL STORAGE FILES

typical advantages of scientific centralized purchasing. These principles are:

1-The development of standards. Reducing the number of kinds of commodities used for the same purpose.

2—Preparation of definite specifica-tions. This will increase honest competition by eliminating ambiguities.

3—The taking of competitive bids, giving all vendors a fair chance to sell to the state.

4-The study of market conditions, making it possible to buy on a favorable market.

5-Buying in quantity for future delivery, making it possible to take advantage of wholesale quantity prices.

6-Prompt payments which bring cash discounts. This is reflected too in lower bids being made by vendors.

7-Effective inspection of all materials bought, insuring full value.

8—Keeping of maximum inventories for good pricing and minimum inventories for amounts needed.

9-Elimination of unnecessary purchases.

10-Centralized control of sale of scrap and salvage material and waste.

11-The transfer of usable materials from one department to another.

12-The reduction of clerical work and time in over-all buying.

13-The reduction of unnecessary sales effort and expenses.

14-The elimination of favoritism, "buck passing", connivances and underhandedness in public purchasing.

1 1 1 **COUNTY FAVORS CENTRAL BUYING**

The Board of County Commissioners for Fayette County, Ky., has passed a resolution calling for the appointment of a Purchasing Agent and Business Manager for the county, to make recommendations to the fiscal court concerning requisitions and purchases. county Taxpayers League had urged the appointment of a purchasing officer with executive authority under the orders and direction of the fiscal court, but it appeared that under existing state laws such an appointee could not assume this full authority, being restricted to the power of making recommendations. The Board's resolution must be approved by the State Attorney General before it becomes valid.

1 1 1 KELLEY ADDRESSES COTTON INSTITUTE

Robert C. Kelley, Purchasing Agent of the Converse Rubber Co. and Chairman of the Textile Group, N.A.-P.A, addressed the 14th annual meeting of the Cotton-Textile Institute, October 23rd, in New York City. Mr. Kelley presented the Purchasing Agent's point of view in a symposium on the machinery and methods of cotton goods distribution. Other speakers presented the viewpoints of the retailer and the converter.

ge ıt

es

id





* Are you working on a negotiated defense contract . . . or a contract including government specified equipment designed by other than government engineers?

If so . . . Guardian Electric is prepared to cooperate as a primary and secondary source of supply for electrical controls.

by GUARDIAN RELAYS and Complete Control Assemblies for:

Bomb Releases . . . Fire Controls . . . Communication equipment for tanks, airplanes . . . Portable Pack . . . Radio Remote Controls . . . Signal Corps requirements . . . Controls for synchronized and non-synchronized Machine Gun Fire on Aircraft . . . Anti-aircraft Gun Control . . . Special Switches for various applications to meet government specifications, and innumerable other special control assemblies, complete, or in part.

SERVICE! Guardian offers the highest speed sample and engineering service in the control industry . . . quality controls to meet the most rigid inspections and delivery schedules. Send a blue print or sketch for cost-free engineering suggestions. Your letterhead brings new Guardian Catalog "P" by return mail. Write.





Type-R Stepping Relay



Just Like Columbia Ribbons & Carbons

The "Delbrasil", one of three new ships of the Mississippi Shipping Company's Delta Line, plying between New Orleans and South American ports, is a beautiful example of streamlining for the ocean.

Columbia Ribbons and Carbons are also "streamlined"—for the office. Faster, neater work, long life and economy dis-tinguish every Columbia type and grade. Specified by many of America's leading firms.

Our laboratory, and our large stock of all types of ribbons and carbons is at your disposal. *Check up now* on your

regular and *special* requirements. Write us at no obligation. Or call the Columbia Office nearest you.

COLUMBIA RIBBON & CARBON MANUFACTURING CO., INC.

Main Office and Factory:
GLEN COVE, L. I.

Branches

S8-64 West 40th Street, New York City: 204 Dwight Building, Kansas City, Mo.; 327 South LaSalle Street, Chicago, III.; 155 West Congress Street, Detroit, Mich.; 227 East Michigan Street, Milwauker, Wis.; 200 Plymouth Building, Minneapolls, Minn. 107 Union Street, Nashville, Tenn.; 314 Pennsylvania Building, Pillsdelphia, Penna.; 908 Standard Life Building, Pillsdelphia, Penna.; 205 East 6th Street, Cincinnati, Ohio (Harris-Mores Company)

London, England

Sydney, Australia

Sydney, Australia

TYPEWRITER RIBBONS & CARBON PAPERS

COLUMBIAN

MALLEABLE IRON MACHINISTS' VISES ARE

Guaranteed Unbreakable







There is a complete line of Columbian Vises and Clamps for all purposes. Send for catalog.

THE COLUMBIAN VISE & MFG. CO.

9019 Bessemer Avenue, Cleveland, O. The World's Largest Makers of Vises





HUNTER PRESSED STEEL CO. Lansdale, Pennsylvania

WHAT DOES THE PUR-CHASING AGENT WANT IN TRADE PAPER ADVERTISING

By WILLIAM E. KERRISH

HAT is it that the present day buyer of industrial equipment and supplies really needs in trade paper advertising?

How can we help him by our trade paper advertising to do his purchasing more readily, more accurately, and with less fuss and feathers?

These are leading questions which advertisers should frankly ask themselves from time to time if their expenditures for trade paper publicity are to continue to "bring home the bacon" for them.

Advertising has been called a silent salesman. While this is not too accurate a term to use in relation to advertising, it is to a certain extent true. But advertising is more than an important help to personal selling, it is also a subconscious educator of many minds. Some business men will admit that they take time to read this or that trade publica-tion "for the ads." This is because the advertisements in those publications are really valuable and interesting to them. They are valuable and interesting because they tell their various stories in a manner readily acceptable to the modern business man, with whom time is indeed money.

It is elementary to say that all trade paper advertising that is worth the name must rest upon a solid foundation of truth, and be worked out and presented with a strict regard for facts. But in addition to this elementary, but basic consideration, the facts themselves should be the ones the industrial buyer needs to have in his work.

The industrial advertiser should think hard and deep in order to discover the facts his prospects need to know about the particular things he has to sell. This he must do for himself-his advertising agency or counsel may be able to coach him in the proper direction, but if his advertising is to become the real voice of his sales message, in printed form, then Mr. Advertiser must give solid consideration to what this advertising message will be. This is not as simple as it sounds. Many concerns have truly wonderful things to tell about their products and service, but somehow they do not seem to be able to bring these things out into the light of day, via their trade paper advertising. They continue to say in effect "Ours is the best" or "Lowest prices for highest quality" though perhaps not in this particular hackneyed phraseology.

Each advertiser has his own vital message, his own story to tell, based on certain facts which are unique with him. It is these unique things about his product that buyers are not only willing to read about, but positively anxious to read about, in his trade paper publicity.

Advertising in the trade press which contains the type of specific facts above indicated (these facts being presented in clear, straightforward manner, with no strained artistic efforts) is the type of advertising which the modern purchasing agent will take time to read, and to study. Such advertising will also claim the attention of the many technical men behind the scenes, who are very often important, but unseen factors, in present day purchasing operations by industrial concerns.

The basic principles here briefly indicated may be effectively applied to every type of product, whether it be paint or varnish for factory upkeep, or items which are bought for use in manufacturing processes. Speaking from considerable experience as an industrial advertising man, the writer believes that these principles must be even more diligently applied today than in the past, by advertisers in building up their trade paper publicity.

In order that the proper and unique facts may be presented in the right way, and with the greatest possible sales effectiveness, there should exist a close practical working arrangement between the manufacturing, advertising and sales departments. It is only when this exists that the most effective advertising is possible. In industrial buying, trade paper publicity does not attempt to displace personal sales work in the field, but rather complements the work of the salesman. In fact it is close team work on the part of advertising and selling that makes the orders flow the right way, and more readily.

Trade paper advertising in the industrial field that rests upon interesting facts, attractively and clearly presented, helps the salesman mightily when he calls upon a Purchasing Agent who has been successfully attracted to the company's advertising, because it has been presented in a manner that talks the P. A.'s language.

Obituary

1

g

ia

st

on m.

d-

to

10

Carl W. Brown, Purchasing Agent of the Queal Lumber Co., Des Moines, Iowa, died at his home in that city, September 24th.

Dana V. Phillips, 36, Purchasing Agent for the Mississippi Shipping Co., New Orleans, died October 4th at the Baptist Hospital in that city, of injuries received in an automobile crash.

Edgar H. Kern, 41, Purchasing Agent of the Weirton Steel Co. since 1929, died October 6th of complications following an attack of influenza. Mr. Kern was a member of the Pittsburgh Association.

Hector J. LeMaire, 51, Purchasing Agent of St. Peter's Hospital, New Brunswick, N. J., died of a heart attack at the hospital, October 9th.

WEBSTER'S PREPAREDNESS GOES RIGHT ON!

Webster products are made from the finest materials from all parts of the world. But we have prepared for the current emergency. We have over a year's normal reserve of raw materials in our present stocks. As a result, we will continue to supply you with the high quality carbon papers and typewriter ribbons for which we have been famous since 1889.

Moreover, Webster is prepared to provide you with specialty items: Carbon papers for gelatin hektograph, and spirit process duplicating machines; carbon-paperribbons for photo offset work; ribbons and carbons for all Elliott-Fisher, addressing, Teletype, adding, and International Business machines.

Whatever your requirements may be, Webster is prepared to meet them, promptly and economically. Write Webster today!

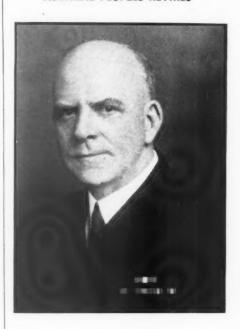
7 Amherst Street, Cambridge, Mass.



WEBSTER'S
CARBON PAPERS
AND
TYPEWRITER
RIBBONS



ADMIRAL PEOPLES RETIRES



Rear Admiral Christian J. Peoples retired from active service as Chief of the Procurement Division, U. S. Government, October 17th, after 45 years of notable service that started with a minor job in the construction and repair department of the Mare Island Navy Yard and carried him to the chief purchasing responsibility for the Navy Department and to further brilliant service in the present emergency. Admiral Peoples' experience included practical work in such diverse branches of Navy operations as shipfitting, pattern making, molding, drafting, and in the machinist and boatbuilding division, before he was assigned to executive duties. He was commissioned an ensign in 1899 as a result of competitive examinations in California. After a three year cruise in Pacific waters, he was ordered to Washington for "temporary duty" which lasted seven years. In 1911 he helped put the U. S. S. Utah into commissioin within four days after her delivery to the Philadelphia Navy Yard, a record for speed and efficiency. In the World War he was awarded the Navy Cross for his effective handling of war supplies. As Chief of the Bureau of Supplies and Accounts, he was instrumental in the development of the Navy Standard Stock Catalog, an outstanding contribution to procurement methods. He was decorated by the French government as a National Commander in the Order of the Legion of Honor for his services in obtaining clearance of \$95,000,000 worth of airplanes for that government in the spring of 1939.

TALK ON PURCHASING

Horace R. McMorris, finance director for Kansas City, Mo., addressed a meeting of the Women's Organization of the Citizens Non-Partisan Association last month, discussing the functions and operation of the city purchasing department.





TWIST DRILL AND

NEW BEDFORD, MASS., U. S. A.

NEW YORK STORE: 130 LAFAYETTE ST. - - CHICAGO STORE: 570 WEST RANDOLPH ST.



INDUSTRIAL DIRECTORY OF NEW ENGLAND

The 1941 edition of the Directory of New England Manufacturers is now available, furnishing in complete and upto-date form an index to industry in the six New England States. Published with the editorial cooperation of the New England Council, it is arranged for maximum usefulness as a reference work, with four complete listing sections-alphabetically by company names, geographically by cities and towns, by product classifications, and by brand names. The information furnished on each company includes the salient facts of interest to buyers and sellers, such as the main address and other locations, the names of corporate officers and purchasing executives, capitalization, and number of employees. It is published by George D. Hall, Inc., 30 Kilby Street, Boston, Mass. 770 pages, substantial cloth binding. Price \$20.00 per

AKRON PURCHASING COURSE

Through the influence and assistance of the Akron Association, the University of Akron is offering a course in purchasing as a part of its regular curriculum for the first time in its hisstory. The course is offered for the first semester of the university year, to meet in evening sessions only, and is open to all who may wish to join. L. A. Murphy, a buyer at the Goodyear Tire & Rubber Co., and a member of the Akron Association, has been added to the teaching staff of the University as instructor for the course. The textbook used is Lewis' "Industrial Purchasing-Principles and Practice," with supplementary material from the N. A. P. A. Handbook of Purchasing Policies and Procedure. The first meeting of the class was held on September 26th, with an enrollment of thirty students, including regular day school students of the University as well as a number of persons from purchasing departments and other industrial positions.

1 1 1 CHANGES AT PRATER CO.

Roy Helgevold has been named Manager of Operations for the Prater Pulverizer Co., Chicago, in charge of plant and purchasing. He has been associated with the company for twelve years. George F. Thomas, who formerly handled purchases, is sales manager of the newly formed Industrial Division of the company.

N. Y. C. APPOINTMENTS

E. S. Bonnet has been named First Assistant Purchasing Agent of the New York Central Railroad, Indiana Harbor Belt Railroad, and Chicago River & Indiana Railroad, in charge of fuel coal and forest products. E. O. Hornig has been named Assistant Purchasing Agent in charge of miscellaneous materials.



The Quickest Way to Solve any Plastics Problem is...

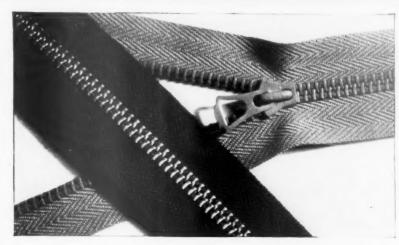
CALL RICHARDSON

Reach for the telephone...call Richardson...and your plastics problem is on the way to a solution. For Richardson, with plants, personnel, and facilities devoted exclusively to the plastics arts, is in position to extend a service that is unique in the industry. Consult Richardson freely. There is no obligation, of course.

RICHARDSON PLASTICS: INSUROK, molded, laminated, translucent; RUB-TEX, hard rubber; EBROK, acid-resisting bituminous plastic; RUB-EROK, stabilized insulation; MICAROK, sheet mica. Literature will gladly be sent upon request.

The RICHARDSON COMPANY

ELROSE PARK, (CHICAGO) ILL. FOUNDED 1858. LOCKLAND, (CINCINNATI) OHIO NEW BRUNSWICK, N. J. DETROIT OFFICE: 4-252 G. M. BUILDING, PHONE MADISON 9386 NEW YORK OFFICE: 75 WEST STREET, PHONE WHITEHALL 4-4487



A LESSON FROM THE SLIDE FASTENER!

High tensile strength, corrosion resistance, and abrasion resistance are "musts" in slide fastener design. Because Seymour Nickel Silver has these qualities, a heavy tonnage of it is used for this purpose.

But, its eminent suitability for slide fasteners recommends it for scores of other products that must operate smoothly and continuous*. Its ability to take punishment is amazing! Why not recommend it to your production department. Test samples sent without obligation.

FEYMOUR Nickel Silver

THE SEYMOUR MFG. CO., 55 Franklin St., Seymour. Conn.



When competitive bids are before you, do receiving room costs enter the picture? Often it is surprising how substantially they can affect the actual cost. Shipments from some manufacturers can be handled easily-unpacking is accomplished quickly -products may be conveniently stored or distributed. But from others, opening and unpacking are difficult, causing delay, costly handling and re-distribution-receiving room expense mounts, and what seemed to be an extremely low bid may turn out to be the highest one.

ACME STEELSTRAPPED SHIPMENTS ASSURE LOW-COST RECEIVING

When shipments have been Acme Steelstrapped for reinforcement and protection, you may be sure that receiving costs will be at a minimum. One snip of each strap-and contents are removed easily and quickly. Bulky, odd-shaped products become easily, quickly, economically handled bundles. It's better buying to insist on Acme Steelstrapped shipments. The supplier will benefit, too-his shipping and handling costs will be substantially reduced.

BE SURE TO GET THE FACTS ABOUT ACME STRAP PURCHASE PLAN

Your own purchases of Steelstrap for your company's shipments can be made most economically on the Acme Strap Buying Plan. Mail the coupon for complete details. No obligation.

ACME STEEL COMPANY 2842 ARCHER AVENUE, CHICAGO, ILL. Branches and Sales Offices in Principal Cities

ACME STEEL COMPANY 2842 Archer Ave., Chicago, Ill.

- □ Furnish complete information about the Acme Strap Buying Plan.
 □ Mail a copy of "Stopping Profit Leaks," describing the advantages of Acme Steelstrap.

City	_State
Address	
Name	

SIMPLIFICATION FOR SUCKER RODS

O. E. McClatchey, Purchasing Agent of the Barnsdall Oil Co., Tulsa, and Chairman of the Oil Company Buyers Group of N.A.P.A., called a meeting of sucker rod manufacturers in Tulsa, October 14th, for discussion of the proposed simplication program in respect to this product. The subject was considered by the Buyers Group at the Cincinnati convention last June and was endorsed in principle; a recent meeting of the Tulsa Association was also devoted to the subject, from the consumer's viewpoint. This angle was to be reconciled with manufacturers' views in the present conference.

1 1 1 WHY BUYERS BUY

An analysis of buying motives in the purchase of industrial goods, by Delbert J. Duncan of Northwestern University, is contained in the summer issue of the Harvard Business Review. It is based on a large number of personal interviews with purchasing agents, the tabulation resulting from this study being then submitted in questionnaire form to more than 400 members of the National Association of Purchasing Agents. questions were designed to develop such topics as the following: Do buyers of industrial goods base purchases on log-



KOH-I-NOOR

DRAWING **PENCILS**

> 10c **EACH**

Manufactured in U.S.A.



Koh-I-Noor Pencil Company, Inc. 373 Fourth Ave. New York, N. Y.

THE CONTRACT OF THE SECOND SECOND



PITTSBURGH, PA.



"TO ECONOMIZE GAIVANI7F AT ENTERPRISE



Prompt shipment via any railroad Local delivery by our own trucks

Galvanized Products Furnished

Quality Galvanizing to meet the most exacting specifications for over 40 years

ENTERPRISE GALVANIZING CO.

2519 E. Cumberland St., Phila., Pa.



peals have the greatest influence? What general influences cause a decision to buy or not to buy at a particular time.

The results of this study, classified as to type of material, and also as to "product" or "patronage" motives, lead to the following generalizations:

I-Heavy Machinery

A-Product Motives

1-Economy

2-Productivity

3—Dependability

4—Time or labor saving

-Durability

B-Patronage Motives

1-Reliability of seller

2—Cooperation

3-Low prices

4—Quick repair service

5-Past services rendered; satisfactory relationships.

II-Raw Materials

A-Product Motives

1-Right quality

2—Uniformity 3—Dependability

4—Purity

5-Ability to increase salability of user's product

B-Patronage Motives

1-Reliability of Seller

2-Continuous supply under all conditions

3-Accessibility of seller

4-Low prices

5-Quick and reliable delivery

of product



Mr. P. A. -

A short life and a merry one is no bargain in the purchase of springs. They are a dynamic product. Long-life and trouble-free performance constitute their true measure of value. Do you buy springs or the work they will do?

Our literature explains fully. Please write for it.

LEE SPRING CO., Inc. 30 MAIN STREET BROOKLYN, NEW YORK





JELLIFF Special Wire Parts made from Nickel Alloys

To Jelliff engineers the problem of producing the parts illustrated above from Monel, Inconel, Nickel, Stainless Steel, also Copper, Aluminum or special alloys, presents little diffi-

Monel Wire, for instance, is drawn in Jelliff wire mills, woven by the Jelliff process into wire screen or filter cloths where destructive corrosion prevents the use of other metals or alloys. Monel cannot rust, is highly resistant to brine, sulphuric acid solution and caustic alkalis, is stronger and tougher than carbon steel and is highly resistant to abrasion. Its rigidity and adaptability to welding and soldering operations make it ideal for wire screen or filter leaves.

Combined with Jelliff skill in fabrication, Nickel Alloy Wires, such as Monel yield a surprisingly low long-term cost.

To Purchasing Agents:

In key cities throughout the U.S. and Canada, sales representatives stand ready to answer your call for further information on Monel and other metal or alloy wire made up into:

Screen Cloth

Fabricated Screen Parts

Industrial Mesh Resistance Wire **Dipping Baskets**

Insect Screen Lektromesh

Metal Filter Cloth

Write Jelliff for Specific Needs on Above

Sales representatives, working from key cities, completely cover the country.

1880 60 th Anniversary 1940



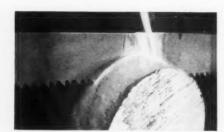
WHICH IS YOUR METAL CUTTING JOB?



Starrett S-M Molybdenum Special Alloy High Speed Steel Hacksaws are tough, fast cutting, low cost blades for cutting hard alloys. Available in hand and power blade sizes.



Starrett 18-4-1 High Speed Steel Blades are real "production" saws designed to deliver the maximum number of cuts at high speed. For production cutting specify STARRETT Hi-Speed Saws. Hand frame or power machine sizes.



Starrett Tungsten Alloy Steel Hacksaws, even though lower priced, are good tungsten blades for all general cutting. Buy them in All Hard Flexible Back and Semi-Flex for hand frames; also for light and heavy power machines.

For complete information that will enable you to pick the one best blade for every job, write for Starrett Hacksaw Book "P",

THE L. S. STARRETT CO. ATHOL . MASSACHUSETTS . U. S. A.



III—Supplies

- A-Product Motives
 - 1-Right quality
 - 2—Dependability
 - 3—Uniformity
 - 4—Economy
 - 5-Durability

B-Patronage Motives

- 1-Reliability of seller
- 2—Continuous supply under all conditions
- 3-Accessibility of seller
- 4-Low prices
- 5-Quick and reliable delivery of product.

BOSTON PURCHASING COURSE

A course in "Purchasing and Stores Control" is being conducted at the Evening College of Commerce, Boston University, with fifteen evening sessions running through the fall term. Robert C. Kelley, Purchasing Agent for the Converse Rubber Co., and a past president of the New England Association, is directing the course for the eleventh successive year.

The course outline lists the following topics: Charting a Purchasing Program in our Present Economy; Developing an Effective Purchasing Technique; Office Procedure, Methods and Systems; Quality Control, Specifications and Inspection; Determining Quantity Requirements; Price Policies; Speculative Purchasing; Purchasing Budgets; Maintain-





Ranging from calendars to candlesticks, this amazing new 912 page Merchandiser is the complete answer to your Good Will Gift considerations for 1940-41. Simply indicate your problems, addressed to department P on your business letterhead, and this big free book will be on your desk within a few days.





BE SURE OF SHIPPING SECURITY with



No. 1303
CASE SEALING
GLUE

Containing 43% solids, it is more economical because it goes farther — must be diluted 50% with water for hand sealing and even more for cases carrying lighter weights. Fine for machine application. Flaps sealed with No. 1303 never come apart. Try a gallon tin—if your supply house cannot furnish it, write direct to:

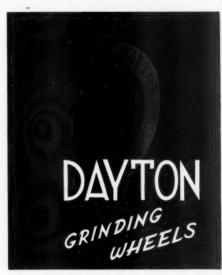
The COMMERCIAL PASTE Co.

Columbus, Ohio

508 Buttles Ave.

When writing advertisers please mention Purchasing





A finer grinding wheel preferred by leading firms. Specify any type, size, grain, bond, or grade.

Simonds Worden White Co. DAYTON, OHIO

Factories at Buffalo, Beloit, Cleveland, Dayton

ing Contacts with Markets; Buying Technique; Knowledge of Commodities and Supplies; Traffic Problems; Legal Aspects of Purchasing; Measuring Purchasing Efficiency; the Purchasing Department Library.

COURSE AT SEATTLE

The Purchasing Agents' Association of Washington is sponsoring a ten-week course on "Economics and Business Administration as Pertaining to Purchasing," with special attention to purchasing problems in a war economy. The classes are open to Association members and also to other interested persons. Prof. Don H. MacKenzie of the College of Business Administration, University of Washington, will lecture and have general supervision over the course.



Flexible BELT LACING

STEELGRIP is a stronger lacing for all power and conveyor belts. Clinches smoothly into belt, compresses the ends, prevents fraying, 2piece hinged rocker pins prevent exces-sive wear. In boxes or long lengths.

> Write for Catalog

Only WIREGRIP Belt Hooks

ave the patented blue Aligning Card that holds hooks in position, prevents them from loosening, prevents hook loss from handling, prevents waste of short ends. Every WIREGRIP Hook to the last one can be



ARMSTRONG-BRAY "The Belt Lacing People"

321 N. Loomis St. Chicago, U. S. A.



ORDER FROM YOUR STATIONER
*EAST OF ROCKIES

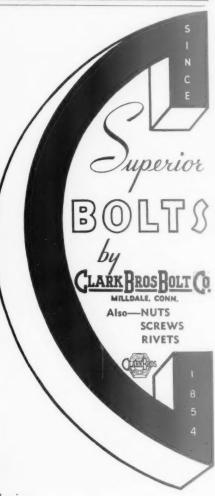
ACE FASTENER CORPORATION 3415 N. Ashland Ave.



Each unit is complete containing strong fibreboard steel reinforced drawer and self contained steel shelving. STAXONSTEEL, for storing semi-active records, builds its own Steel Shelving as you stack it. You can stack as high as the ceiling, bolt each stack together in batteries and never have any sagging or bulging.

Write today for complete information and FREE miniature sample. No obligation.





When writing advertisers please mention Purchasing

BAND SAW CONTAINER



An improved container for saw bands has been devised by The DoAll Company, Des Plaines, Ill. It is a metal box which is much more rigid and durable than the cardboard box originally developed for packaging narrow band saws. It is designed so that by holding it in one hand, the saw can be pulled out with the other hand in the

same manner as a tape measure is drawn out. When the desired length is pulled out, it is snipped off, ready to weld into a band.

Each box contains 100 feet of saw, and there is a "window" which shows how many feet of saw remains in the box. These boxes may be stacked on a shelf like books and there is a label on the outside edge which gives complete specifications of the saw.

Having the coil contained in a durable box prevents cutting hands, tangling the coil, and keeps the saw from being damaged. The box stands hard service both for shipment and for shop use.

WRITING TRANSMITTER

A telescriber for instantaneously transmitting written messages over wires has been announced by TelAutograph Corp., New York, N. This instrument is capable of transmitting writing, sketches or figures in facsimile to a number of stations simultaneously or to any one or more stations selectively, within one building or between buildings



miles apart. It is streamlined and extremely compact. Dimensions: 105%" high, 12½" wide, 18¾" deep. The machine operates on alternating current and can be plugged into convenient power outlets. All models have a black "crackle" finish.

Two features of this instrument increase its speed of operation: the complete writing field is automatically cleared of each message by one touch of a starter switch, and an electric paper take-up replaces the manual winder previously used.

RUBBER RUG

■ Introduction of a heavy duty, protective floor covering, identified as the Tu-Tone rubber rug is announced by The Goodyear Tire & Rubber Co., at Akron,



The rug may be applied to practically any size or shape of floor. It is made in rolls 54 inches wide and 30 feet long and can be cut and matched to fit any desired area. Overall thickness of the rug is 5/16ths inches and it is adequately heavy to eliminate "creeping" or "crawling."

Tu-Tone effect is given the rugs by the original ribbed design, the ribs being arranged diagonally across panels nine inches by 12 inches. The ribs provide excellent non-skid footing and are cut deep enough to provide space for catching dirt, and wide enough to make cleaning easy. The rugs are available in black, red, or green.

EYELET FASTENER

■ The eyelet base fastener, manufactured by Acco Products, Inc., Long Island City, N. Y., has eight eyelets by which it is securely attached to the file folder. The base is inserted in a recessed panel, embossed in the folder. The base being flat, it fits snugly into the recessed panel, presenting a perfectly smooth, flush surface. It does not protrude or bulge, which results in saved space and has the added advantage of not catching on other papers or folders.

Complete information and sample will be supplied on request

DRINKING CUPS

■ A deluxe model of its cone shaped paper cup is announced by Universal Paper Products Co., Chicago, Ill. The cup features a firm, completely rounded rolled rim that adds to its rigidity and reproduces the comfortable drinking edge of a water glass.

It combines the features usually found only on flat bottom cups, the economy and handy size of cone shaped cups, and the extra strength of the Vee Cup double wrapped, triplerigid construction.

It needs no extra room for storage or in the dispenser. It nests just as well as the standard cup and is packed in the same size cartons. Present users can serve the new cup from the same dispensers.

The patented construction utilizes what would otherwise be waste paper to secure a double thickness of paper around the cup. The addition of the rolled rim makes it even more sturdy. This rim is an actual roll of the same dry waxed, pure white paper used for the rest of the cup and is formed on special machines.

AUTOMATIC FILE



■ The automatic executive file in combination with the personal efficiency set has proven a "boon" to busy executives. The unit conforms to desk height and when open exposes the entire contents of the upper compartment and papers can be read easily without removal from the file, because of the perfect "V" opening which is accomplished by the automatic expanding and compressing feature.

The bottom drawer is mounted on ball bearing progressive suspension slides and also has the exclusive expanding and compressing feature which gives 9" of extra working space. The unit is mounted on rubber tired casters.

By closing the top and turning the key the complete unit is instantly locked and all records are safe. This unusual unit is manufactured by the Automatic File & Index Company, Chicago, Illinois.

STENCIL MACHINE

■ This latest type stencil machine cuts stencils with speed, ease and economy. Its features include, streamline design; short, powerful handle stroke, spacer button; larger hand wheel and indicator: hardened and ground dies; quick replaceable



Made in three sizes, 1", 34" and ½". Product of Marsh Stencil Machine Company, Belleville, Ill.

They will gladly demonstrate this machine in your shipping department.

MASONRY BOLT ANCHOR



■ Something new in a masonry bolt anchor has been placed on the market by The Rawlplug Company, Inc., New York City, N. Y.

It's a two-piece unit—consisting of a sleeve and a nut, held to-

gether by perfect precision taper friction.

The sleeve is formed with one vertical slot extending its entire length which opens or closes according to variation in the diameter of the hole in the masonry. No caulking is required—the few blows of the hammer in driving the sleeve into the hole being all that is necessary.

When locked the anchor cannot move vertically or horizontally—the sides of the anchor always remaining parallel with the wall of the masonry regardless of position of nut or expansion of sleeve.

The Reputation of

Carrier WEATHERMAKERS

leaves no room for "doubtful screws"



For extra secure fastenings, Carrier Corporation uses only Parker-Kalon Self-tapping Screws

Like thousands of other manufacturers, Carrier knows that it not only gets better assemblies but also saves money by using Parker-Kalon Self-tapping Screws. It has found that the Quality-Control routine established by the famous Parker-Kalon Laboratory guards against the "doubtful few"—those screws that look okay but increase assembly costs by failing to make satisfactory fastenings.

You'll get no "doubtful few" if you insist on Parker-Kalon Self-tapping Screws. These Screws work right and hold tight every time because they are Quality-Controlled, and are made with the most modern equipment by a company with over 25 years' experience in Screw manufacture. Can you ask for any stronger guarantee of high quality? Mail coupon for free samples of Self-tapping Screws to: Parker-Kalon Corporation, 202-204 Varick Street, New York, N. Y.



Quality-Controlled

TYPES, SIZES, HEAD-STYLES FOR EVERY ASSEMBLY OF METAL OR PLASTICS



SOLD ONLY THROUGH RECOGNIZED DISTRIBUTORS



DAYLIGHT BROUGHT INDOORS WITH HYGRADE FLUORESCENT!

Finest quality Fluorescent lighting complete "packages" of daylight-

MIRALUMES!



20 foot-candles of illumination provided by MIRALUMES in machine shop at Nash Motors Division of Nash-Kelvinator Corp.

SHOWN HERE is one of many MIRALUMES available. The only Fluorescent Lighting Units made complete—lamps, fix-tures, starters—under one roof! Designed, engineered, built, sold complete and guaranteed by HYGRADE! Quality manufactured to meet the highest standards. Corrected for power factor and stroboscopic effect (flicker). Starters easily accessible. Maintenance cost low! Underwriters Laboratory Approved.



INDUSTRIAL MIRALUME F-100: 100 watts; 2 40-watt tubes; approximate length, 54". No nuts or bolts in reflector surface.

WRITE TODAY for free MIRALUME catalogue, with complete information, prices, discounts. Address Dep't P-11, Hygrade Sylvania Corp., Ipswich, Mass.—or see your Electrical Contractor. NOTE: Extraordinary lighting efficiencies are obtained in fluorescent lamps, and by tuning the electric discharge to concentrate ultra-violet energy at the precise 2537 Anstrom Unit wavelength most effective in causing the porous film (Hygrade patent 2096593) to generate light, the best results are secured. The means for achieving these results so important to the efthese results so important to the efficiency of HYGRADE LAMPS, are described in patent numbers 2126787 and 2201817 now controlled in this field by HYGRADE. The high power factor non-stroboscopic circuit used in this unit is described



Copr. 1940 Hygrade Sylvania Corp.

PRECISION SHARPENER







opment of a metal saw sharpener.

■ The "Curled Chip" system of high speed metal sawing is already proving its value in many difficult production operations, according to engineers of E. C. Atkins and Company, Ind., Indianapolis, who originated this new saw tooth blade. Foreseeing the need for an automatic precision grinder to sharpen the curled chip Saws, Atkins collaborated with the Covel-Hanchett Company in devel-

To preserve the scientific set of the tooth forms, the sharpener is controlled by special cam action for the exact clearances of high and low teeth as well as precise beveling.

The importance of precision grinding can be readily appreciated from a brief study of this system of metal cutting. This depends on cutting with a rolling action coiling action rather than a pushing or telescoping action. The chips are coiled into the specially curved gullet and spring clear from the end of the cut when tension is released.

SMALL ELECTRIC COUNTER

■ A small electric counter which has been developed especially to meet the demand for a dependable magnetic counter at low cost is being marketed by the Production Instrument Chicago, Company,

This counter has a very small energy requirement (about 2 watts at rated voltage) which insures



long life to switch contact points and makes the instrument particularly suited for electric eye operation.

Tamper-proof construction, non-reset feature, totally enclosed assembly, small size, convenient mounting, and attractive appearance make these counters ideal for built-in applica-

FORMS-WRITING MACHINES



machine every writing problem is manufactured by Burroughs Adding Machine Co., Detroit, Mich. They adding, calculating, accounting, statistical, forms-writing, cash registering, etc.

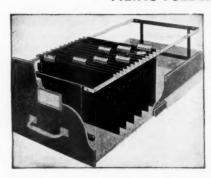
Among the many optional features are:

electric carriage return, electric platen shifting, reverse tabulation, selective column tabulator, palm tabulator, removable

When writing advertisers please mention Purchasing

stop bars or keyset mechanism, form heading holder, bill magazine, roll paper holder, continuous forms carrier, fanfold mechanism, form slitter, etc. There is a wide variety to meet all writing requirements.

FILING FOLDERS



■ A radically new and unique method of vertical filing has been perfected by Oxford Filing Supply Co., Brooklyn, N. Y. A simple steel frame is placed in any letter or legal size drawer after removal of the follower block or other supporting means. Frames are supplied to fit drawers of va-

rious depths and these frames remain in the drawers permanently thereafter.

The folders, fitted with hanger rods and slant insertable celluloid tabs, are suspended from the frames, on which they slide easily back and forth. Headings are always on the same level and the positions of the tabs are easily changed as desired. The folders will last for years. Slanted insertable celluloid tabs are used in 1/3 cut and 1/5 cut widths. They are readily attached, removed, or shifted in position.

LOW TEMPERATURE BLACK BATH

■ A low temperature black bath developed by the Du-Lite Chemical Corporation of Middletown, Conn., originally used for coloring gunsights, has been adopted by 95% of the gun manufacturers in America as a bath for gun barrels and

Notice...

To Manufacturers Who Are Bidding On – Or Have Already Received – Defense Program Orders

• Steel Strapping is usually specified in government orders for security and protection to materials delivered to all its departments. Generally the strapping size is specified. However there are commodities ordered that need the protection of strapping in which strapping is not specified. In such cases the supplier must determine the method of application and size of strapping to be used.

The Signode System of Steel Strapping brings cost control in time and materials to the oft forgotten shipping operation. This means the manufacturer of Defense Orders can rely upon the Signode System to help him meet close delivery dates and take advantage of significant cost savings as well—savings that can well mean the difference between profit and loss on a closely figured Defense Program contract.

Write or Wire Today for Full Details.

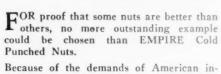
SIGNODE

STEEL STRAPPING CO.
2602 N. Western Ave., Chicago, III.
371 Furman St., Brooklyn, N. Y.
454 Bryant St., San Francisco, Calif.
Grant Bldg., Pittsburgh, Pa.

40 OFFICES THROUGHOUT UNITED STATES AND CANADA









dustry for a truly superior product, RB&W built at Coraopolis, Pa., the largest and most modern nut manufacturing plant in the world, and the only plant in the United States devoted exclusively to the manufacture of nuts. Here all administrative and production facilities are concentrated on a single product—special machinery, neither duplicated nor equalled elsewhere, has been developed only for making that product—every energy is focused on the manufacture of better nuts!



In the manufacture of EMPIRE Cold Punched Nuts, punching is done at right angles to the flow lines of the steel, eliminating danger of stripping or splitting. Then the nuts are re-punched, an exclusive RB&W operation that accurately centers and finishes the hole. A burnishing operation, originated by RB&W, gives "semifinished" nuts a flawless plate-like finish. Tapping by a principle developed at RB&W produces precise accuracy and cleanness of thread. A remarkable intraplant transportation system governs all these processes through to the final operation of dating each keg the moment it is packed, insuring rapid, accurate delivery to the buyer of a nut that is better.

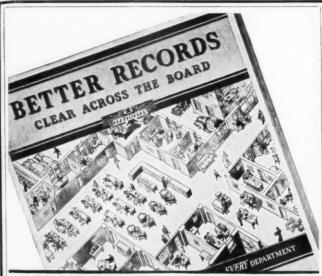


R B & W manufactures a wide variety of types of Bolts, Nuts, Rivets, Screws, Washers, Rods and Special Upse: and Punched Products in various materials and finishes. Send for catalog and price list.

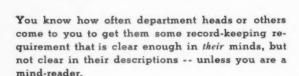


RUSSELL, BURDSALL & WARD

PORT CHESTER, N. Y. ROCK FALLS, ILL. CORAOPOLIS, PA



AHelpful Booklet FREE to YOU



Well, this booklet is for just such moments. You don't have to stop work and help them search through a big, bulky, confused catalog. This is a compact, condensed, clear, fully illustrated showing of all the most commonly used forms, binders, sheets, pads and devices. Any department-head can use it for himself and specify exactly what he wants. That's a time-saver for you, right there.

But "Better Records" is more than a catalog. It is full of useful information on the latest practice in the use of forms and records for all kinds of business purposes. A two-page *check-list* will help all your associates keep in touch with modern usage, thus saving office time and money.

You will want one yourself. Possibly, too, you may want to put copies in the hands of your office and employment managers, accountants, sales and advertising managers, production and stock-room men and others.

ASK YOUR NATIONAL STATIONER

Or -- particularly if you want extra copies -- write us

NATIONAL BLANK BOOK CO.

HOLYOKE, MASS.

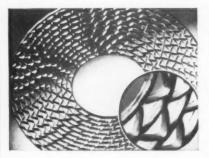


other black parts.

Its special features are a great reduction in finishing time, and the finish itself is a particularly rich, deep black that will not rub off. Another feature of interest is the low temperature at which it is used, ranging from 290° to 300°, at a short time hold in the bath, which does not in any way affect any heat treatment previously applied. It forms no deposits of dirt or film on threads or other surfaces, does not harden, draw or embrittle, and the residue washes off freely in cold water. This is of special importance to users of malleable iron, as there is no risk of injuring ductility or malleability through crystallization of fibers at high temperature. It is admirably suited for any kind of ferrous metal blacking in any industry.

The company offers to process samples free of charge to demonstrate the finish.

MAGNETIC FILTER



move ferrous particles from circulating oil systems of machines and engines with Ferro - Filter, product of S. G. Frantz Co., Inc., New York, N. Y.

By a stack of powerfully magnetized patented screens enclosed in a casing

through which the oil flows, this filter extracts the abrasive iron particles, even as microscopically fine as one micron, which pass through conventional filters, screens and other commonly used purifying devices. The filter is located close to machine or engine in the oil pipe line and becomes part of circulating lube oil system. The features are: full flow,



low pressure drop, high capacity, non-clogging, no moving parts, no replacement parts to buy, does not remove oil additives, cleaned in one minute or less, rugged construction. Can be used in cutting oil systems, lubricating systems, vegetable oils, food products, colors and pigments, process water, ceramic slips and glazes, vitreous enamels, etc.

ALUMINUM LADDERS



Two double type aluminum ladders have recently been developed and placed on the market by the Aluminum Ladder Co., Tarantum, Pa.

Constructed with steps on both sides instead of on one side as in the conventional step ladder, the new ladders are especially valuable for use where two persons must use the ladder at the same time, and where ladders must be used in very narrow hallways and aisles. In the lat-

ter case, ladder can be mounted from either side, and there is no necessity for the workman to waste time in forcing himself through the narrow passage between ladder and wall.

Both ladders are constructed throughout of a special aluminum alloy having a tensile strength of 48,000 lbs. per square







FOR FREE HAND OR TOOL POST GRINDING. FOR DIES, PUNCHES, SPECIAL MACHINE PARTS -- CUTTING NON-FERROUS METALS

New Stanley No. 153 Grinder, priced only \$39.50, has full $^{3}/_{8}$ h.p., 18.000 r.p.m. motor which provides ample power to drive grinding wheels up to $^{1}/_{2}$ " x $^{1}/_{2}$ ".



FOR PRECISION GRINDING OF DIES, GAUGES, TEMPLETS AND SPECIAL SHAPES, TRIMMING, CORRECTING DISTORTION FROM HARDENING . . .

Stanley No. 150 Contour Grinder, priced only \$69.50, has tilting $^{3}/_{8}$ h.p., 18,000 r.p.m. motor under table, convenient switch and light.



STANLEY MANK

FOR FAST GRINDING
ON TOOLS, DIES AND
CASTINGS; PREPARING
FOR WELDING OR
SMOOTHING WELDS

Stanley No. 585A Flexible Shaft Grinder, priced \$66.50, has improved flexible shaft 42" long, ball bearing hand piece, precision collet chuck. 3/8 h.p., 18,000 r.p.m. motor supplies ample power.

These tools will pay for themselves in a few weeks of daily production work. They're ready for prompt delivery, and built to last. Your Stanley distributor will be glad to demonstrate the many "big machine" operations they will handle! Look into it—right now! Complete literature on request. Stanley Electric Tool Division. The Stanley Works, 156 Elm Street. New Britain. Connecticut.

STANLEY ELECTRIC TOOLS



CREPE WADDING

protects your product dresses your package



Showing bow Charles A. Stevens & Co., Chicago, uses KIMPAK in a typical gift packing to protect beautiful Sevres vases against shipping damage.

• KIMPAK* is the ideal packing material-inexpensive, light-weight, flexible, it can be applied quickly and easily without fuss, muss or waste. Your product, be it big or small, protected by KIMPAK, travels in a safety-cushion of soft, yet resilient material

that helps to guard against finish or structural damage to its original "factory-fresh" condition. What's more, KIMPAK takes a vigorous part in stimulating sales by dressing up your package and giving it added beauty and distinction.

KIMPAK is manufactured by the Kimberly-Clark Corporation to the highest standards of quality and uniformity, and may be had in rolls, sheets and pads of wanted thicknesses and sizes. Our engineers will gladly assist in solving your packaging problem.

* Rea. U. S. and Canada Pat. Off.

	FR	EE!	1940	Portfolio	of	KIMPAK
--	----	-----	------	-----------	----	--------

KIMBERLY-CLARK CORPORATION

Neenah, Wisconsin

Address Nearest Sales Office:

8 S. Michigan Ave., Chicago; 122 E. 42nd St., New York City.; 510 W. Sixth St., Los Angeles Please send us the 1940 Portfolio of KIMPAK.

Company	
Address	

Attention of _____Our Product is____

construction. The ladder designated as No. 900 is 36" high, has a platform 12" by 15", yet weighs only 13 lbs. The feet are fitted with rubber pads for protection of hard wood and marble floors. SYNTHETIC RUBBER COMPOUND

inch. This material is practically indestructible and, of course, is much lighter in weight than most materials used in ladder



■ An all-purpose synthetic rubber compound which permanently retains its adhesion, elasticity and waterproofing qualities has been introduced by American Bar Lock Co., Inc., Long Island City, N. Y.

The product contains no disintegrating resins, asphalt or putty, and is applied cold with a gun or trowel. Rigorous tests have demonstrated its ability to seal glass laid horizontally over an opening exposed to the weather, recognized as the toughest test

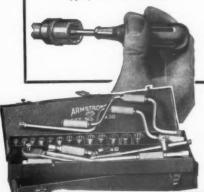
for any compound. These tests have also proved that it will stand up for the life of the material to which it is applied in hundreds of other sealing, caulking and waterproofing jobs.

This synthetic rubber compound has a vice-like grip, does not deteriorate when exposed to weather, and is resilient to the expansion and contraction of other materials. It does not powder, become brittle, crack, or otherwise disintegrate. Absolutely watertight, it adheres permanently to wood, stone, brick, concrete, metal, glass and other surfaces.

ARMSTRONG

Socket Wrenches with the "Drivelock"

These are the finest Detachable Head Socket Wrenches obtainable. Chrome-Vanadium Steel Wrenches, Drivers and Extensions. Drop-Forged Ratchets, plain or reversible, sizes from tiniest "Miniatures" to great Construction Ratchets. Single wrenches and sets for every purpose. Chrome or Cadmium plated . . . and with the patented ARMSTRONG "Drivelock" that, without special tools, makes tools safe . . . locks sockets to drivers, drivers to extensions and handles, prevents heads from knocking or falling off. An important safety and convenience feature and an extra ARMSTRONG value, Standardize on ARMSTRONG Wrenches-over 100 types, each in all sizes.



Write for Catalog C-39



ARMSTRONG BROS. TOOL CO. "The Tool Holder People" 303 N. Francisco Ave., Chicago, U. S. A. Warehouse & Sales: 199 Lafayette Street, New York

DRAWING MACHINES

■ The Portable Drawing Machine manufactured by The Drafto Company, Cochranton, Pa., is a handy, time-saving tool for engineers, architects, students, salesmen, executives, any one whose work or study requires the making of drawings or sketches quickly.

There are seven models in their two new series. There is a size for every need. The protractor is made of stainless steel with all of the graduations very accurate and with the vernier that is attached to back plate it is possible to set the machines to one-half degree. The latching feature makes it possible to latch the protractor accurately at 0°, 30°, 45°, 60°, 90° either side of 0°.

The boards on all these models except one, are made of masonite, which makes the most perfect surface for drawing possible to find. All the models will take their standard detachable scales. The masonite board is colored green. The arms are made of chrome steel with a bright chrome finish on one side and a dull chrome on the bottom side. All of the other parts are finished in a dull chrome plate. The finish on the protractor is a circular polish making it very easy to read and at the same time it does not tire the eyes during long use.

GLUING AND MOISTENING MACHINES



For speed and economy in the shipping room investigate the gluing and moistening machines manufactured by Glue-Fast Equipment Co., Inc., of New York City.

This equipment is constructed entirely of bronze which makes it acid resistant and eliminates all

CHICAGO MOUNTED V/T SUPER BOND



150 % LONGER LIFE

V/T Super Bond is the most important development in mounted wheels in 30 years. Does work faster and better. Won't ridge on welds, sharp corners, sinking dies, barbering, etc.

TRIAL WHEEL—Tell us kind of job, type of equipment you use and size wheel and we'll send you one to try out.

one to try out.

FREE CHART—A Wall
Chart 22 x 15" shows actual size and shape of
every standard Chicago
Mounted Wheel, Ask for
one.

HI-POWER GRINDER—For jobs beyond the capacity of the Handee, nothing compares with the HI-POWER in vibrationless performance, precision and stamina. 17,000 r.p.m. with ample power to drive a $2\frac{1}{2}$ diam. wheel. Wt. 3 lbs. In wood case with accessories, \$35.00.

HANDEE TOOL OF 1001 USES—A small "power house" that can be used wherever there is an electric outlet. Grinds, drills, polishes, cuts, routs, carves, sands, saws, sharpens, engraves, cleans, etc. Uses 300 accessories. Weighs 12 oz. 25,000 r.p.m. \$18.50 postpaid with 7 Accessories.

Send for catalog of complete line.

CHICAGO WHEEL & MFG. CO.

Makers of Quality Products for 40 years.

118 S. Aberdeen St. Chicago, III.







Constructed for HEAVY DUTY

An engineering masterpiece is the George Washington Bridge. Stretched across the Hudson River with a channel span of 3,500 feet, it handles over 20,000 heavy vehicles a day.



Compare this with the ordinary country bridge. The small bridge may be adequate for its needs, but it would not hold together long under the heavy traffic of the George Washington Bridge.

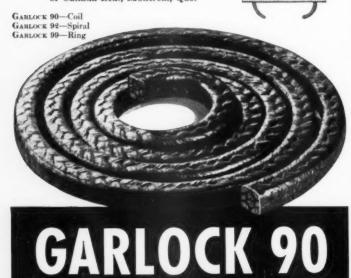
Like the George Washington Bridge, GARLOCK 90 Waterproof Hydraulic Packing is also constructed for heavy

duty. Manufactured from the longest fibre, imported roving, sorted and graded by flax experts and braided with extreme care, Garlock 90 is unusually strong and durable.

Garlock 90 is recommended for rams, accumulators, hydraulic pumps, elevator plungers or outside packed pumps handling cold water or cold oil. It gives long dependable service on all heavy-duty hydraulic jobs. All sizes from ½" to 3".

THE GARLOCK PACKING CO. PALMYRA, NEW YORK

In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.

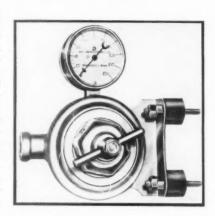


possibilities of corrosion. The machine can be equipped with a heating unit for dispensing hot glue with a small additional charge. For moistening purposes wick covered rollers which are interchangeable, can be supplied.

A special leak proof base contains the glue and a guide permits a simple adjustment for any thickness of paper. It operates freely with one hand, is no trouble to clean, and can be easily moved about with perfect cleanliness. It weighs only 3 pounds and the overall size is 7 inches. The evenly spread adhesive eliminates the necessity of wiping off excess glue from the labeled article.

REGULATOR PRESSURE GAUGE

M A combination pressure gauge and self-contained reducing regulator valve, for receiving a varying or high air pressure at the inlet side and automatically delivering a constant reduced pressure at the outlet side is available from the Dayton Rogers Manufacturing Co. of Minneapolis, Minn. It is primarily designed for all air pressure control.



This type is especially desirable for installation in limited space such as used in the average industrial shops. A safety release valve releases any excessive pressure, it is provided in the body of the regulator, together with a built-in filter on the inlet side. The filter is the replaceable cartridge type, and can be removed without the use of special tools or without dismantling or dismounting the regulator.

PORTRAIT

OF

A

PRODUCER



Here is a "portrait of a producer"
... a man who, because of long
experience and specialized knowledge, helps many Eastern purchasing directors and other executives
reduce costs, improve results and
save time in their production and
maintenance cleaning operations.

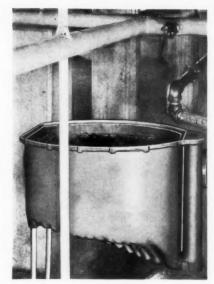
He is typical of more than 100 Oakite Service Representatives comprising a unique nation-wide organization, which is devoted exclusively to producing new cleaning economies and improvements for thousands of concerns.

For money-saving ideas on your cleaning problems, have our nearby Service Representative call. Write today . . . no obligation.

OAKITE PRODUCTS, INC., 54 Thames St., NEW YORK
Representatives in All Principal Cities of the U. S. and Canada



RECLAIMING WASTE MATERIALS



wherever lubricants, fuel oil or other liquid substances are used in m a n u f a c turing or storage, there always exists the possibility of loss of these liquids through leakage, drippings, and seepage, due to connections and pipe breaks which proves costly over a period of time.

Goodly quantities, irrespective of methods used, find their way into sewers and waterways causing waste and pollution.

Besides the above many other substances such as coal,

minerals, brass particles, etc., often become thoroughly mixed with water or some flowing substance and usually lost.

All these, plus the conditioning of the water, can be accomplished by the conditioner made by Gale Oil Separator Co., Inc., New York City.

It is a scientifically designed and constructed unit, every corrugation, every baffle, every eddy and every action being predetermined with one definite known result in mind, the separation of the largest possible percentage of one ingredient from the other at the lowest possible cost and with the least attention.

This device will condition liquids of different specific gravities.

"LINK"

GUMMED TAPE DISPENSERS with LABEL MOISTENER

Save Time, Tape and Trouble
WITHOUT SETTING
ANY GAUGES they deliver instantly any length of
tape perfectly moistened
and cut at one
stroke.

SIMPLE and DURABLE construction.

NO PARTS TO GET OUT OF ORDER. Tape cannot buckle, jam or clog.

FAST and EASY to operate. Always ready for use.

Made also in "Senior" size for tape $1\frac{1}{2}$ " to 3" wide.

"JUNIOR"
For Tape from
1/2" to 11/2" wide

Manufactured and Guaranteed by

L. LINK & COMPANY, Inc.

149-151 LAFAYETTE STREET

NEW YORK, N. Y.

Quick Service

LINK-BELT SPROCKETS

* 25,000 ALWAYS IN STOCK—CUT OR CAST-TOOTH *



• Every Link-Belt sprocket is carefully fitted to the chain. This final step in the highly-developed Link-Belt process of sprocket manufacture eliminates the "break-in" period—a period of accelerated wear on the chain, as well—yet it costs you nothing extra.

Get them right from stock — bored and keyseated to your order, ready to install. We also can give you quick and efficient service on cut and cast tooth gears.



LINK-BELT COMPANY, Chicago, Indianapolis, Philadelphia, Atlanta, Dallas, San Francisco, Detroit, Boston, Los Angeles, Seattle, Portland, Ore., Toronto. Other offices and distributors in principal cities.

TENSHUN!

Today's Defense Program Demands

No time, in these quick-moving days, to waste on broken pencil points. Every member of your organization must keep on his toes—and that goes for your equipment, too. Boston Pencil Sharpeners—Model L, especially — are speedy, economical and efficient. Boston's exclusive speed cutters—with 15 euting edges—Boston's larger chip receptacle — Boston's moderate prices help you, and your associates, meet extraordinary demands of the defense program. Choose from among 14 Boston models. Ask your stationer today.

The BOSTON Line is the First Line for the Pencils!

SPEED ECONOMY EFFICIENCY



C. HOWARD HUNT PEN CO., CAMDEN, N. J.

BOSTON PENCIL SHARPENERS



Standard Boorum & Pease Post Binders are the most efficient binders yet devised for housing records in a manner that permits easy reference when information on past transactions is required. They combine quick accessibility with maximum security, and are made in all standard sizes in a range of styles to meet every requirement. Among the most popular lines are:

BING! SPEED BINDER. An exclusive Standard B & P product — no protruding posts, instantaneous action. Bound in Full Black Fabrihide or Canvas with Leather Corners.

MAJESTIC. Exclusive transfer features. Toplock and Endlock styles. Sectional posts, 5/16" and 3/8". Corduroy sides, with back and corners of high grade cowhide, gold tooled.

PROGRESS. Three styles of mechanism: Endlock, Toplock and Slide Button Toplock. Sectional posts, 5/16" and 3/8". Heavyweight Green Canvas sides, with Red Leather corners.

Consult our Catalog No. L-23 for other styles, sizes, detailed description, and prices, or ask your stationer to show you the full Standard B & P Post Binder line.

Manufactured by

BOORUM & PEASE COMPANY General Offices: 84 Hudson Avenue BROOKLYN, NEW YORK

SOLD BY LEADING
STATIONERS EVERYWHERE

MIDGET WRENCHES



By using a high grade steel, the Blackhawk Mfg. Co., Milwaukee, Wisconsin, claims a unique compactness and strength for their line of midget socket wrenches have a 1/4" square drive, and socket sizes range from 3/16" to 7/16".

Miniature "Half and Halfs" (combination open end and box

type wrenches) accompany the midget socket wrenches in the 18ND set which is furnished in a 5½" x 3-9/32" red and black plastic container that slips into the coat pocket. The "Half and Halfs" have openings from 7/32" to 3%", the smallest tool being of "watch-charm" size.

IMPROVED DUPLEX-TYPE CHEMICAL PUMP

■ An opposed-type duplex chemical pump with capacity of 4 gallons per hour against a pressure of 3,000 lbs. is now offered by Milton Roy Pumps, Philadelphia, Pa. Only one hp. is required and the explosion-proof, geared motor and pump are an integral unit of exceptionally compact design. Double-ball check-valve construction for both suction and discharge on pump chambers is an exclusive feature of this pump.

This step-valve construction not only eliminates air-binding but also automatically discharges small particles of dirt and



SEE PRICE LIST NO. 5

Prices of standard KENNA-METAL tools and blanks have been reduced as much as 60% — extending the production economies of this superior steel-cutting car-



bide to all machine shops, large or small.

These drastic reductions in prices have been made possible by the amazing demand for KENNAMETAL tools for machining steel of any hardness range, which in turn has permitted economical mass production. In line with the policy of McKenna Metals Company, these savings are passed on to the customer. If you do not have Price List No. 5 (issued Sept. 1940), write for free copy today.



makes pumps self-cleaning. Pump plungers, ball checks and ball seats are all of stainless steel. The entire unit is rugged, mounted on a rigid base and has an ample factor of safety.

BEARING HAS OWN OIL-CIRCULATING SYSTEM



Another "New Departure" by New Departure, Bristol, Conn., is a vertical tension pulley bearing for textile machinery. This bearing, identified by the number TP-13-500, has been under development and test for a considerable time and is now being used in some of the latest textile machines.

Its design is unique in a number of respects, for the bearing not only provides

a vertical stub shaft on which the pulley is mounted, but it contains its own oil circulating system for speeds of 3500 to 15,000 r.p.m By this system, oil is drawn from a reservoir below the bearing and is passed in a fine spray or mist directly to the balls and races. Since the bearing is of the self-sealed type with all-metal seals, the oiling system is completely enclosed and oil need be added only at yearly intervals.

Another feature is its extreme ease of rotation, there being no drag in the seals or resistance to turning by the lubricant. The simplicity in mounting this bearing is worthy of special attention. It requires no locknuts, screws or other parts and it may be removed instantly without tools for re-oiling and

SAVE ON THE "TURNOVER"



with Central DOUBLE CHAMFERED **NUTS . . . Both Sides Are Right Sides!**

★ That's it . . . both sides of Central Double Chamfered Nuts are right sides. No heads or tails. Assembly line workers pick 'em up right side up every time. No thumbing or fumbling for BIG SAVINGS on assembly costs.

Let us send samples of these clean bright, well-made, uniformly shaped and threaded Double Chamfered Nuts. Find out how much faster they pick up and spin on for a perfect fit.

Order any quantity in steel and brass for same day shipment out of stock. Write for full details today.

CENTRAL SCREW COMPAN

3515 SHIELDS AVENUE

CHICAGO, ILLINOIS

LINK-BI





THEY LAST LON

• Simple . . . dependable . . . economical . . Link-Belt babbitted and bronze-bushed bearings are designed for modern supporting structuresfor today's requirements. Scientific metal distribution, in compact, well-proportioned units, provides maximum strength and durability with minimum weight and bulk. You can get them in a full range of types and sizes right out of stock. Also investigate Link-Belt's complete line of anti-friction bearing units and other power transmission equipment.

8112-A

LINK-BELT COMPANY

Chicago, Indianapolis, Philadelphia, Atlanta, Dallas, San Francisco, Detroit, Boston, Los Angeles, Seattle, Portland, Ore. Toronto. Offices and Distributors in Principal Cities.



TO THE RESCUE OF STALLED

PRODUCTION



BARNES-MADE SPRINGS







CCURATE TO SPECIFICATIONS



INSPECTION DELAYS

MEETING YOUR TIME SCHEDULES

GET A BARNES QUOTATION



ON YOUR

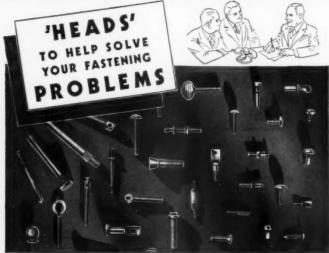


PRODUCTION PARTS

WALLACE BARNES COMPANY

BRISTOL CONNECTICUT DIVISION OF THE ASSOCIATED SPRING CORPORATION

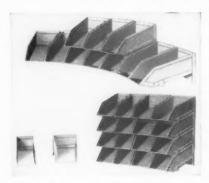




FOR practical solutions to problems involving made-to-order screws and headed parts — formed accurately and economically by the cold upset process — it will pay you to consult PROGRESSIVE experts. In addition to standard Machine Screws and Nuts we specialize in fastening devices requiring heads, threads or finishes to meet particular requirements. Send us your sample screws or specifications for estimates. No obligation, of course.

The PROGRESSIVE MFG. CO.

ASSEMBLY BIN FOR LARGER PARTS



In response to the requests of many manufacturers for a stacking assembly bin of larger size, Stackbin Corporation of Providence, R. I., have brought out a new size assembly bin.

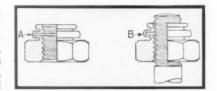
This bin is 12" long, 4" deep, 5" wide in front and 6" wide in back so that it can be used to hold larger parts than was for-

merly possible. As in the former style, the contents are fed toward the front by a sloping floor, but an additional advantage of this bin is that it is big enough to allow the entrance of your hand,

These assembly bins can be used on any assembly bench can be set up in a semi-circle and stacked one above the other to keep all important parts constantly accessible.

SELF-LOCKING NUTS

The Boots selflocking nut manufactured by Scovill Manufacturing Co., Waterbury, Conn., is an effective one-piece, all metal nut designed to withstand the most



severe vibration. It is essentially two nuts in one, with the top



BLUE STAR SEALING TAPE

Ride along with PLANET Blue Star Sealing Tape just once, and you'll ride regularly—for users of PLANET Blue Star are sure-fire repeaters. To find out why—try a free sample coil. Ask your paper merchant or write us for a sample.

MCLAURIN-JONES CO. BROOKFIELD. MASSACHUSETTS

OFFICES IN NEW YORK, CHICAGO, LOS ANGELES

section displaced in a downward direction so that its upper (locking) threads are out of lead with respect to the load-carrying threads of the lower section. The two sections are connected by a spring member which is an integral part of the nut. Upon the insertion of a bolt, the spring member allows the top section of the nut to be extended to permit it to engage properly with the threads of the bolt. A force is thus established which firmly grips the nut without damage to the threads of the screw or bolt and accommodates all thread variations. It utilizes standard threads.

In the sketches "A" shows the spring member in its displaced position when not engaged with a screw or bolt. "B" shows the position of the spring member when the nut is engaged. Both sketches are exaggerated to show the principle involved.

VALVES



Thomas in the illustration is the latest type of valve developed by McKenna Metals Co., Latrobe, Pa. Known as a "slow up valve," it has a small ring of Kennametal inserted in the valve seat, with a cone shaped piece of Kennametal, ground and lapped to the same angle of chamfer, tipped on the valve stem. Both seat

and stem are lapped so accurately they will hold a vacuum.

These valves are extremely resistant to both erosive and corrosive action. For this reason they have wide applications in

LINK-BELT

FLEXIBLE COUPLINGS



TYPE "A"

Made on the double slider principle for low speeds and heavy torque.



TYPE "B"

Made specifically for moderate shock loads and for noiseless operation.



TYPE "RC"

Has great flexibility of design for meeting special conditions. Rugged in construction, easy to install, durable, reliable, and efficient in service.

MEET THOSE SCORES OF DIFFERENT NEEDS

• Be sure you use the right coupling. Look at the three types featured on this page—all have a generous margin of capacity over actual requirements, which means longer service with little maintenance—all have been proved in actual service. Send for Book No. 1845.

LINK-BELT COMPANY

Chicago Indianapolis Philadelphia Atlanta Dallas San Francisco Toronto Offices, warehouses and distributors located in principal cities.

Casings for "RC" Type Couplings



Several styles of revolving and stationary casings are available for all sizes.





THE C. E. SHEPPARD CO.

44-05 Twenty-First Street L. I. City, New York

OOSE LEAR

Cesco

SMOOTH

HUNDREDS of plants throughout the country have demonstrated, in daily operation, the dependable and

...IS THE WAY GRAVER-BUILT EQUIPMENT SUITS YOUR NEEDS

efficient performance of Graver-Built Equipment.

Reduced costs and long-term satisfaction come from Graver's sound engineering and precision construction. Find out how SMOOTHLY Graver-Built Equipment will fit into YOUR plant program of modernization or expansion.

GRAVER builds

Water Softeners . . . Filtration Systems . . . Clarifiers Steel Storage Tanks . . . Vapor Conservation Systems Fabricated Steel and Non-Corrosive Composite Plate.

For full particulars on Equipment to meet your requirements write Graver Tank and Mfg. Co., Inc., Dept. 21. East Chicago. Indiana.

Graver Products mean Quality

GRAVER TANK & MFG. CO., INC.

NEW YORK

EAST CHICAGO, IND.

CABLE ADDRESS - GRATANK

TULSA

large users. Is our name on

your list of suppliers?



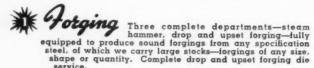
Give your shipments more protection against damage; speed up production in your shipping room . . . with a really dependable



sealing tape that costs no more than ordinary sealing tape! Red Streak Sealing Tape is made of durable kraft, amply coated with quick setting glue. Write us today for a free sample roll. No obligation.



We Serve on 3"Ironts"



Heat Oreating
Your forgings heattreated to any specifications. No forging too large—no quantity too
large. We operate one of the largest batch type
furnaces in existence. Complete pickling and
blast cleaning department.



Machining

Our modern

machine shop is

equipped for every phase of metalworking — turning, shaping, planing,
broaching, hollow boring, etc. Intelligent supervision, dependable in
every detail.

May we send our representa-tive or bid on your next requirements? Send your blueprints.

KROPP FORGE COMPANY

5315 W. Roosevelt Road . Chicago, Illinois

WORLD'S LARGEST JOB FORGING SHOP REPRESENTATIVES IN PRINCIPAL CITIES the oil industry, where oil containing sand in suspension soon wears out ordinary valves; in the gas industry, where corrosive gases are encountered; in the chemical industry, where its high corrosion resistance favors its use in acid proof pumps and similar equipment; and in other industries where resistance to abrasion and corrosion is important.

PORTABLE ELECTRIC SANDER

A portable elecsander using tric standard 3 inch by 24 inch abrasive belts is announced The Syracuse Guild Co., Syracuse, N. Y. With a belt speed of 1350 feet per minute, this tool speeds up sanding and surfacing operations on wood, metal, mar-



ble, slate, plastics, and other composition materials. Equipped with a ½ hp. Universal motor, it operates on any 110 volt a.c. or d.c. line, or can be supplied for other voltage requirements. It is balanced, compactly built and easy to handle. All moving parts, including the drive and idler pulleys, are equipped with precision ball bearings. Its patented belt aligning control insures perfect belt traction regardless of motion used. Another patented feature is its quick belt change latch that cannot stick.

Light in weight (only 15 lbs.), the sander is a time saver on both bench and holding jobs. It is equally efficient on new work or removing old finishes, interior or exterior. The frame is sturdily cast of tough aluminum alloy and has a highly polished, mirror like finish.



USE CAST METAL LETTERS AND FIGURES

Standard in foundries and pattern shops for over seventy-five years. Ornamental types made of highly polished aluminum or bronze for signs on buildings and truck bodies.

> Available in stock designs or made to order from your sketches.

H. W. KNIGHT & SON, INC. SENECA FALLS, N. Y. I NORTH LANE

PNEUMATIC DIE CUSHION

A new design of pneumatic die cushion, made in four sizes has been introduced by the Dayton Rogers Manufacturing Com-Minneapolis, This general utility telescoping die cushion is very well adapted to all press applications, including inclinables and straight sides. It may be used singly or in multiples. Multiples



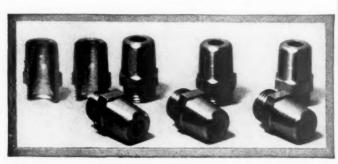
are used in two, four and six units, and mounting plates are made special to fit the given press requirements.

These telescoping cylinders make it possible to mount this type of cushion on a given press without providing a pit for same. The accurate guidance of the pin pressure pad, which is so essential on most classes of work, is therefore easily obtained by their type of cushion, and this feature makes them well adaptable to all kinds of work requiring balanced pressure on the draw ring.

This cushion will fill a long felt want where extremely heavy ring holding pressures are wanted in a limited space beneath the press bed proper.

CONVEYOR BELT FASTENER

■ For joining the thin, light weight conveyor belts that are growing more and more popular, Flexible Steel Lacing Company, Chicago, Ill., has added a new size to their line of belt fasteners. This size is used for joining elevator and conveyor



Send Us Your Orders

SCREW MACHINE PARTS

The Newton plant is well equipped to make prompt delivery at this time on turnings of all types — in steel, brass, bronze, nickel, silver, aluminum and other metals up to 1" diameter.

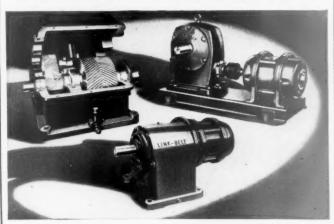
Send us your blue prints or other descriptions of what you wish and estimate will be promptly supplied.

THE NEWTON MANUFACTURING COMPANY

20 Riverside Ave., Plainville, Conn.

SCREW MACHINE PARTS (SEPARATE OR ASSEMBLED)

LINK-BELT SPEED REDUCERS



A Line that is Complete Unbiased Engineering Service

• The three improved types of reducer units included in the Link-Belt line—Herringbone Gear, Worm Gear, and Motorized Helical Gear—meet today's needs for the dependable transmission of power at accurate speeds. They are built in a large variety of sizes, ratios and horsepowers. Call in a Link-Belt positive drive specialist to help you select the most efficient unit for your requirements. Send for catalogs on these and other Link-Belt positive drives.

LINK-BELT COMPANY

Philadelphia, Chicago, Atlanta, San Francisco, Toronto, Indianapolis Branch offices located in principal cities

Guard your Production against ACCIDENTS!

• IS YOUR SAFETY EQUIPMENT ADE-

ing payrolls? Overtime? Two shifts? Three shifts? In the rush to meet demands of our Defense Program, don't overlook the vital need of protecting workers against accidents, thus maintaining uninterrupted schedules. Remember-Pulmosan has complete stocks of "everything for industrial safety" ready to safeguard every hazard in your plant. Let us know your requirements. Pulmosan Safety Equip. Corp., Dept. P, 176 Johnson St., Brooklyn, N. Y.

QUATE to meet increas-



WRITE FOR COMPLETE CATALOG

Illustrates and describes Safety Equipment for every hazard, every occupation, every industry. Write today for your free copy.

PULMOSAN SAFETY EQUIPMENT



The worker himself simply lifts the seat to the height he finds best suited for his work and there it locks instantly and securely.

FVER-HOLD

Automatic Adjustable Stools and Chairs

are adjustable to any fraction of an inch up to 10 inches. No thumb screws, no gadgets, no tools needed. They give "Height that's right"—a third comfort feature without any extra cost. End tiring strain—and note more and better work. Write for Catalog, Prices and Discounts.



Simply lift seat to height that's right. Automatically locks in place.

Kewannee Tyg. Co.
LABORATORY FURNITURE GEXPERTS

C. C. Campbell, Pres. and Gen. Mgr.
5006 S. Center St., Adrian, Mich.
Leaders In the Manufacture of Laboratory and Library Furniture Since 1905

belts from 5/16" to ½" thick. The holding bolts are large size, yet, because of its short length, the new fastener will travel around pulleys as small as 14" in diameter.

It is constructed and applied in the same fashion as their other fasteners. Metal plates span the joint on opposite sides of the belt and are drawn tightly together by two bolts through the belting. Bolt heads and nuts are countersunk and the protruding bolts are broken off; the fasteners are flat and smooth on both sides.

Purchasing Executives Participate in Scrap Conference

EPRESENTATIVE purchasing executives from leading companies in the railroad, automotive, electrical, agricultural implement, and machine tool industries, participated in a conference on steel scrap supplies at Washington, October 16th, contributing to a study of the subject being made by the National Defense Advisory Commission.

Those in attendance were:

H. G. Beatle, Supervisor of Salvage Materials, General Electric Co., New York.

Milton Meissner, Assistant to General Manager, Purchases and Traffic, Westinghouse Electric Co., Pittsburgh.

C. O. Miller of General Motors Corp., Detroit.

E. P. Reustrum, Purchasing Agent of International Harvester Co., Chicago.

D. S. McDannel, Director of Purchases, Deere & Co., Moline.

Col. C. D. Young, Vice President, and E. J. Lamneck, Purchasing Agent, Pennsylvania Railroad Co., Philadelphia.

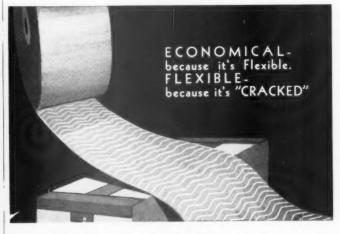


HERE'S the modern die stock that saves time and bother, assures smoother threads and years of stand-up-and-take-it service. For this self-contained RIDGID No. 65R threads 1" to 2" pipe with 1 set of chaser dies — shifts quickly to each size — no extra dies to lug around or lose. Choice of 2 mistake-proof workholders, instant setting to pipe size, no bushings needed. And durable? . . . it's all-steel malleable-alloy with drop-forged hardened tool-steel cam plates.

You get credit for wise tool investment when you specify RIDGID. Make your next die stock a No. 65R—for better threads at less cost. Ask your Supply House.

THE RIDGE TOOL CO. . ELYRIA, OHIO





ECONOMY WITH SAFETEX GUMMED TAPE

SAFETEX Tape is "processed" or "cracked" after gumming which breaks the glue surface into fine hairline cracks . . . These cracks make SAFETEX Tape soft, cloth-like and pliable, so that it can be handled with a maximum speed and a minimum of effort, especially over the edges and around the corners of a box. This means real economy in sealing operations through the elimination of waste.

Distributed by Paper Merchants Everywhere

CENTRAL PAPER CO. MENASHA, WIS.

"HALLOWELL" BENCHES

. . . have all the features you want!

- ★ STEEL CONSTRUCTION to insure lifetimes of service, freedom from splintering, splitting and wobble.
- ★ HEAVY FLANGED steel leg construction that eliminates necessity for bolting to the floor and that provides the permanent rigidity so vital for good workmanship.
- ★ EASY MOVABILITY to permit flexible shop arrangements and the conversion of two or more "Hallowell" Benches into one continuous working surface—or vice versa.
- * STEEL TOPS for heavy work or attractive laminated wood tops for delicate work.
- ★ MORE THAN 1300 styles and models available promptly from stock to meet the most special requirements . . . and at prices that are most attractive. Write for catalog.



JENKINTOWN, PENNA. BOX 590

BOSTON · DETROIT · INDIANAPOLIS · CHICAGO · ST. LOUIS · SAN FRANCISCO







CALL CULLMAN

Over 45,000 accurately made sprockets in stock for immediate shipment. Special sprockets made to order.

Write for catalog

CULLMAN WHEEL CO.

1342 Altgeld St.

Chicago, III.



This name identifies the one blade that will stand up to the heaviest feeds, and highest operating speed that any hack sawing machine can pull.

The only unbreakable
High Speed HACK SAW BLADE

Composite construction; genuine 18% Tungsten High Speed Steel cutting edge integrally welded to a tough alloy steel body. These blades will out-cut and out-last any other hack sawing machine blade built.

> If you want production, equip all saws with MARVEL High-Speed-Edge Blades and speed up to full capacity.

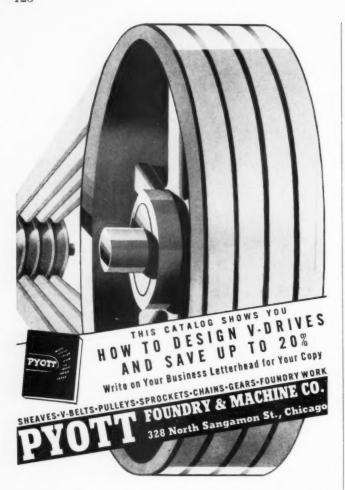
ARMSTRONG-BLUM MFG. CO.

"The Hack Saw People"

5700 Bloomingdale Ave.

Chicago, U. S. A.

Eastern Warehouse & Sales: 199 Lafayette St., New York



CERTIFIED FELTS

manufactured to

United States Government and S. A. E. Specifications

Felters Certified Felts set the standard in piece goods or washers, gaskets, strips, wicks and die-cut shapes. Write for our booklet:

"Unisorb in the Industrial Plant"

Some of the uses for which Certified Felt is available:

Acoustical Correction Airplane Insulation Auto Chassis Pads Bolsters for Tanners Coat Fronts Electrical Appliances Filters for Dust Masks Oil Filtering Oil Wicks

Packing Piece Goods Silencing Pads
Shock Absorbers
Vibration Isolation
Washers for
Air Brakes
Dust Rings
Grease Retaining
Lubricating
Weather Strips
Window Channels

Precision Instruments

THE FELTERS COMPANY, Inc.

210 SOUTH ST., Dept. B-11 BOSTON, MASS.
Offices in Principal Cities

FELTERS FELT FUNCTIONS

W. C. Bower, Vice President, Purchases and Stores, New York Central Railroad, New York.

G. O. Beale, Chief Purchasing and Stores Officer, and J. L. Quarles, Chesapeake & Ohio Railroad, Cleveland. J. H. Lauderdale, General Purchasing Agent, Missouri

Pacific Railroad, St. Louis,

E. S. Jamieson, Assistant Purchasing Agent, Union Pacific Railroad, Omaha.

R. B. Melgaard, Assistant Purchasing Agent, Chicago, Milwaukee & St. Paul Railroad, Chicago.

L. H. Skinner, of Southern Railway Co., Washington. H. P. McQuilkin, Assistant Purchasing Agent, Baltimore & Ohio Railroad, Baltimore.

E. R. Stettinius, Jr., head of the Commission's Industrial Materials Division, and Leon Henderson, of the Price Stabilization Division, conducted the conference. As a result of the opinions presented, the Commission is satisfied that supplies of scrap iron and steel will be adequate and that there is no basis for a further price advance. No special effort is contemplated to increase stocks for the usual commercial requirements or the additional requirements of the National Defense program, other than a plan to increase supplies of heavy melting scrap by pressing more light gauge materials, such as auto bodies and fenders, into a form acceptable to the steel manufacturers.

In order to carry out such a plan, it will be necessary for dealers in the scrap trade to widen the use of large hydraulic presses. This implies a considerable investment on the part of the dealers, since such presses cost up to \$40,000 each. To that end, some government assistance in financing the addi-

tional equipment may be necessary.

It is estimated that as much as a million tons of heavy melting scrap may be made available from this source, which has heretofore been exploited only on a relatively small scale. Another million tons may be preserved for domestic use through the embargo on scrap exports to Japan, which recently became effective. Supplies from these two sources will go far to meet the additional demand for 1941, which it is estimated will amount to three or four million tons. As for the balance, it is believed that steel mills can extend the area from which they draw scrap metal, at no appreciable increase in cost. It was also pointed out that with increased manufacturing schedules, production of scrap will naturally show a normal increase over the figures for the present year, tending to keep the situation in balance.

The purchasing executives, being large buyers of steel as well as producers of scrap, were agreed that they did not wish to see scrap prices rise to a level that might necessitate an advance in steel prices, and expressed a uniformly cooperative attitude in working to prevent such a rising price spiral. It was the general opinion that such a development could be avoided. Basically, the present situation is not regarded as comparable to 1936, when steel makers, short of inventory, bid actively in the scrap market and pushed prices to high levels. Today's market is characterized as essentially orderly, with no factors indicating a sharp price advance in the near

future.





The rubber roller coaster that takes mountains for a ride

A typical example of Goodrich development in rubber

Take a look at plants that furnish stone for roads, dams, bridges. Whole mountains of gravel are carried by rubber-and-cotton conveyor belts to crushers and screens, where rocks are crushed and sorted according to size.

Looks troubleproof, but big rocks would catch in pulleys, tear expensive belts to ribbons.

Goodrich engineers weren't going to let that go on . . . they developed an entirely new belt design. Instead of stiff woven fabric which cuts and tears like any cloth, this new Goodrich belt is made of individual cords like a tire, some lengthwise, some crosswise, each cord surrounded with rubber. Tearing action won't pass along the belt—at worst an obstruction causes a small, easily-repaired hole instead of a long, ruinous tear.

The new Goodrich belt was installed in the Wyoming plant in the picture. A test (not on the program) came the first day. A heavy crowbar caught in the belt, bent like a hairpin around the pulleys, and wedged against the framework where it would have ripped any other belt to useless shreds. But the Goodrich

cords held until power could be shut off, and a \$2000 belt was saved.

Goodrich improvements in all rubber and synthetic goods are making savings just as spectacular, in plants in every industry. Isn't it just good business to let your Goodrich Distributor tell you what those savings might be in your operation? The B. F. Goodrich Company, Mechanical Goods Division, Akron, Ohio.

Goodrich

SERVICE-QUALITY-ECONOMY



Dependable HOLTITE Fastenings

COMPLETE STOCKS - PEAK PRODUCTION - DELIVERIES ON TIME!

With the latest precision machinery, modern production methods, long service workers supervised by a skilled engineering staff, and every scientific laboratory facility, the spacious Continental Screw Company plant of over 3 acres floor space is amply equipped to economically produce quality fastenings, and render the accelerated service required to meet present day demands.

Within our own plant we have a fully equipped steel processing mill which enables us to complete the important first stage of fabrication independent of all outside sources.

The HOLTITE line comprises a wide range of time-tested, precision-made fastening units. It has been our privilege to assist thousands of manufacturers in the design and production of Special parts and fastenings precisely suited to their individual needs. Send samples or specifications of your requirements for quotations.

Specify HOLTITE products on your next order — check their strength, accuracy, uniformity and ease of application — you'll find them the most economical fastenings for smooth, uninterrupted production.



CONTINENTAL SCREW CO New Bedford, Mass... Warehouses at Detroit & Chattanooga s

n d

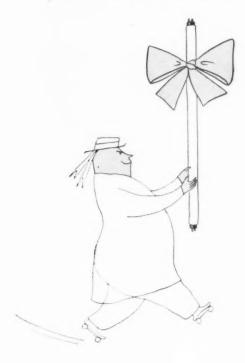
i-

S. tx+ ni-

nd

20

If you want to speed up your business and lead the rest



then find out today what G-E Fluorescent Lighting can do for you -

THERE are two ways to speed **L** up production schedules in your plant . . . regardless of the kind of plant it is. One is to train new employees and buy new equipment and enlarge your plant.

The other way-while you're waiting to do all this--is to put in G-E Fluorescent Lighting!

Does that sound too simple? It is simple. People can see faster and work more efficiently when they have plenty of light. And with G-E Fluorescent Lighting you can have more light than you ever had before! Light that in color, quality, and coolness. in over-all diffusion, is the closest practical approach to actual daylight ever devised!

When can you get it? Now, tomorrow! Your G-E MAZDA lamp distributor can show you a full line of approved fluorescent fixtures, ready to hang up and use with G-E MAZDA F (Fluorescent) lamps. And that's vitally important. If you want the full benefits of General Electric lighting knowledge and leadership. be sure you actually get G-E MAZDA lamps. They assure maximum light output for current consumed and they're made to stay brighter longer! If you want to speed up your business, phone your G-E lamp man or your power company today, or mail the coupon for the inside story of the most exciting new kind of light developed in the past 61 years!

COMPLETE FIXTURES NOW AVAILABLE



Industrial unit, 100 watts, using two 40-watt, 48-inch G-E Mazda F lamps.



Industrial unit, 75 watts, using tw 30-watt, 36-inch G-E Mazna F lamp



Industrial unit, 100 watts, using two 40-watt, 48-inch G-E Mazna F lamps.



This label identifies Fleur-O-Lier fix-tures, made by over \$5 experienced man-ifacturers, and certified by Electrical Testing Laboratories as meeting \$6 speci-tications set up by Mazna lamp man-diacturers, when equipped with ballasts and starters certified by E. T. L.

The certified fluorescent fixtures shown above are only a few of the many com-plete fixtures now available through G-E MazDa lamp distributors, G. E. does not make fixtures but is glad to recom-mend Fleur-O-Liers and RLM Indus-trial Fixtures.



On June 1, 1940, General Electric announced sweeping price reductions on Fluorescent and many other types of G-E Mazda lamps for home and business, including Mercury Vapor and Silvered Bowl Mazda lamps.

for use only with equipment providing good power factor, such as Fleur.(). Liers, or RLM Industrial Fixtures,

A WORD OF ADVICE

Be sure you get G-E MAZDA F lamps, made to assure maximum light output and stay brighter longer, Remember, unless they have the G-E monogram & they're not G-E MAZDA lamps!

G-E MAZDA LAMPS GENERAL & ELECTRIC

General Electric Company, Dept. 166 P-L Nela Park, Cleveland, Ohio Please mail, without obligation, complete information about G-E Fluorescent lighting for my plant.

Name of firm

Address



FROM his window the Superintendent of a chemical processing plant saw the stacks belching smoke that turned day into night. It happened before-just recently.

He suspected boiler trouble. "Maybe, there's one reason for production delays!" He grabbed a phone. "Why the blackouts, Bill?"

"The forced draft blower is acting up," replied the engineer, "the valve in the steam line's gone out again!"

Only a short time ago this valve was repaired. Yet, again, it was causing irregular boiler operation and fuel waste; in fact, it might have crippled the boiler completely! That's how Preventive Maintenance-the modern way of protecting against trouble by stopping it at the sourcecame into the case.

The engineer knew that valves shouldn't behave that way. But he wouldn't risk ordinary repair again. And through the Crane Man, R. B. H., he would benefit from Crane's wide experience and knowledge in applying the best corrective measure.

The first step in applying Preventive Maintenance is making sure that

valves and fittings are right for working conditions.

Here was a renewable disc valve in the steam line to a turbine-type blower. It couldn't stand the "gaff" of constant throttling. The disc wouldn't last. The draft blower ran wild!

Preventive Maintenance counseled replacement with a Crane No. 141/2P -a plug type disc valve designed for tough throttling jobs. Its materials and construction would safely resist the ravaging effects of throttled steam. It would give unvarying control of flow-keep the blower running at constant speed.

RESULTS: No more blackouts even after two years. The menace of interrupted boiler operation, fuel waste, even complete shutdown was eliminated with Preventive Maintenance. Another user of piping knows that the Crane Man can help get most for piping maintenance dollars. Because. Crane is not only the source of valves and fittings for every need, but also of accurate information on their proper usage.

This case is based on the personal experience of R. B. H., a Crane Representative in our Minneapolis Branch.

WITH CRANE BRASS PLUG DISC VALVES

In your boiler room-in any lines requiring severe throttling, vou'll find these valves exactly right for the job. They're sound protection against trouble in blower, blow-off and boiler-feed services, in drip and drain lines.

The unusual stamina of these Crane valves is in their plug-type disc and seat construction. Materials are just the right combination for highest resistance to the corrosion and erosion of actual working conditions. The wide seating area repels the damaging effects of wiredrawing and foreign matter; assures long-lasting tightness. The tapered disc provides easy, positive regulation of flow.

With Crane Plug Disc valves, you can apply money-and-trouble-saving

Preventive Maintenance to all the tough spots in your piping. They're available in a complete range of pressure ratings. For 150 pound services, specify the No. 1412 P-in sizes up to 3 inches.



CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO

VALVES . FITTINGS . PIPE PLUMBING . HEATING . PUMPS

NATION=WIDE SERVICE THROUGH BRANCHES AND WHOLESALERS IN ALL MARKETS



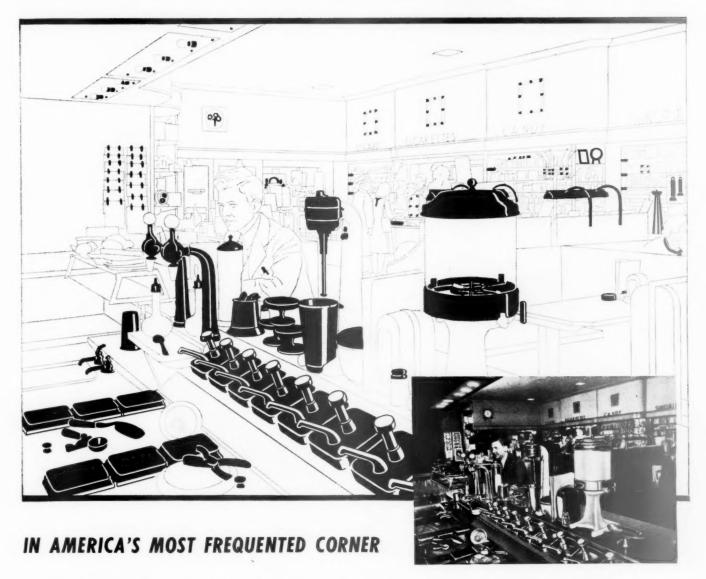
When writing Macklin Company please mention Mill & Factory



Better See 🖽 Authority on Packaging

FACTORIES: BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND • DETROIT • GLOUCESTER, N. J. • HOBOKEN, N. J. KANSAS CITY, KANS. • LENOIR, N. C. • MONTREAL • MUNCIE, IND. RICHMOND, VA. • ST. LOUIS • SANDUSKY, OHIO • TORONTO

SIGNS OF SCOVILL...



Remember the picture on this page—the next time you are in a drug store. Here is an idea of Scovill's diversified contributions to industry and your every-day life.

When the soda fountain attendant mixes a drink, squeezes an orange, or dips ice cream he is probably using equipment either Scovill-made or with Scovill-made parts.

When your secretary buys a vanity case, novelty jewelry, or a pencil; when your salesman buys a razor, a traveling kit of toilet accessories, or a flashlight — they are probably being indirectly served by Scovill, for this company through its mills and contract manufacturing

departments is a source of supply to thousands of customers for varied products.

To some, Scovill supplies the mill products from which the articles are made or the screws and rivets with which they are assembled. Others use Scovill's facilities as a source of supply for metal parts ready for assembly or for complete metal products ready for sale.

Each customer can be served according to his needs for in the working of base metals (steel and aluminum as well as brass, nickel silver and copper) — in stamping, drawing, forming, forging, machining, plating, buffing and polishing — Scovill is a specialist.

Why not find out how you, too, can profitably come to Scovill and use this comprehensive service. Write for the booklet "Masters of Metal." It's free — write to 42 Mill Street, Waterbury, Connecticut.



Boston, Providence, New York, Philadelphia, Syracuse, Pittsburgh, Detroit, Chicago, Cincinnati, San Francisco, Los Angeles IN CANADA: 334 King Street, East, Toronto, Ontario

BULLETINS LITERATURE ON REQUEST TO AID YOU IN PURCHASING

4-Dust Control—A simple and satisfactory solution to a wide diversity of dust problems is described and illustrated in a catalog entitled "Rota-Clone" issued by the American Air Filter Company, Inc. Also shown are typical installation photographs.

5– Industrial Pumps — Horizontal and vertical shaft centrifugal pumps from 3/4" to 6" in size for pumping everything except clear inactive liquids is covered in a bulletin issued by the American Brake Shoe & Foundry Company. Helpful pump data together with characteristic curves, construction and installation views is given.

6-Shaped Wire—Useful information to help specify grade, temper and finishes, also illustrations of some of the many shapes of wire available are given in a book issued by the Page Steel and Wire Division of the American Chain & Cable Company, Inc.

7-Management Review—An interesting and informative publication issued by the American Management Association, contains digests of articles on management appearing in over 400 publications, and brief reviews of current business books.

8-Metal — Brief facts about their metal are described in a sixteen page illustrated booklet issued by Ampco Metal, Inc. This well-known copper, high aluminum, high-iron alloy is used as a material for bushings, bearings, gears, and similar applications where long life and resistance to wear are important.

9-Loudspeakers—Various types of weatherproof, dust-proof, and high-powered loudspeakers for industrial call system application are listed in a catalog offered by the Atlas Sound Corporation. These speakers, used in major public address system installations, have been designed with the purpose of projecting sound in the nosiest factory.

10-Office Seating—The importance of correct seating and its relation to the efficient functioning of every other piece of equipment in the office is illustrated and described in a catalog issued by The General Fireproofing Company.

11-Sandpaper — An educational booklet entitled "Sandpaper, Its How and Why" is offered by the Behr-Manning Corporation. It is full of valuable information not only for the student of industrial arts but also for the experienced user of coated abrasives.

12- Grating and Treads—The many advantages of electroforged steel grat-

ing and stair treads are described in an illustrated catalog distributed by Blaw-Knox Co. These gratings are easily maintained, are non-slip, self cleaning and of maximum open area which admits light and air. A diverse range of uses, applying to many industries and a micrographic analysis of the forged structure of the grating are included. Product of Blaw-Knox Company.

13-Materials Handling Equipment—An illustrated catalog describing various types of truck casters, wheels, lift jacks, trucks and dollies is issued by the Bond Foundry & Machine Company. The proper use and application of each type of caster to assist in the selection of the caster and wheel best suited for the purpose is suggested.

14—Power Transmission Equipment—A comprehensive catalog on power transmission equipment is offered by Boston Gear Works, Inc. Essential calculations and price list are contained, as well as methods of lubrication and motor specifications.

15—Thermometers & Pressure Gauges—A catalog on rectangular case thermometers and pressure gauges, published by The Brown Instrument Company, covers a complete line of vapor-actuated, gas-actuated, mercury-actuated and portable thermometers for indicating, recording and controlling processing operations.

16-V Drives—Up-to-date drives for every kind and type of service are attractively illustrated and described in a catalog issued by the Browning Manufacturing Company. These drives are accurately machined and balanced sheaves together with matched endless true running belts eliminate vibration. They are capable of withstanding severe shock loads.

17- Machine Tools—Defense begins with machine tools. Tools made by Carboloy Co., Inc., help Gisholt step-up production 30% on 1000 applications. 80% of these applications are steel cutting jobs.

18- Air Conditioning—The latest development in air conditioning, refrigeration and heating fields are described in a pamphlet published by the Carrier Corporation. Photographs of equipment which range all the way from inexpensive window ventilators to huge centrifugal machines and from oil burners to frosted food cabinets are included.

19-Meters — Liquid level meters, adapted to a multiplicity of applications, in indicating and recording the level of



2-Texrope Drive—Data essential in estimating costs, types and sizes of V-belt drive equipment, also information on cast iron adjustable and vari-pitch sheaves are covered in a bulletin prepared by Allis-Chalmers Mfg. Co.

3-Aluminum Casting Alloys — Wider use of aluminum alloys in the casting industry is the natural result of a more general appreciation of their properties. A handsome booklet incorporates these products and describes the various alloys.

GEARED UP FOR ANY FILING REQUIREMENT



TYPE "A" ALUMINUM FILE. Special teeth prevent "chatter." Made for rapid filing of aluminum, aluminum-alloy, other ductile-metal castings, bars or sheets. Flat and Half-round shapes, 6" to 16".



LONG ANGLE LATHE FILE. Teeth cut for cleanshearing and self-clearing effect; to prevent drag or scoring; for fast, smooth finishing under light pressure. Mill, 10" to 16"; Flat, 6" to 16".



BRASS FILE. Short "up cut" teeth prevent file running off the work; long "overcut" breaks up filings and keeps file clear of chips. Available in Flat and Half-round shapes. 6" to 12".



DIE-CAST FILE. File designed mainly for finishing die-cast objects consisting of combinations of aluminum, zinc, magnesium, etc. Extra-strong teeth on edges. Mill and Half-round, 6" to 14".



STAINLESS STEEL FILE. Special-shape teeth to withstand the high abrasive action of the tough chromium carbides and nickel alloy. Available in same shapes and sizes as general-purpose files.



FOUNDRY FILE. Extra-rugged teeth and heavy-set edges - to resist "shelling" and breaking out. For fast metal removal on rough castings. Flat, Halfround, Round and Square shapes, 8" to 18".

SPEED, accuracy and work-volume are the industrial watchwords of today. Metals and their alloyed offspring are manifold. Products and production methods present widely varying conditions.

The combinations of factors are so many and varied that it is not enough to know which type of tool or device to use, but what special design in the tool will lead to the best action or results in a given instance or on a particular job.

This is particularly true of files. Nicholson has found the multiplicity of filing problems big enough to command the exclusive study and attention of specialists.

Deep-rooted in this policy, Nicholson makes nothing else . . . lists more than 3000 kinds, sizes and cuts of files . . . has become the largest file manufacturer in the world . . . and, through well-equipped facilities for fast production, special orders, or consulting service, is geared up for any filing requirement.

NICHOLSON FILE CO., PROVIDENCE, R. I., U. S. A. (Also Canadian Plant, Port Hope, Ont.)

• A few of the many Nicholson and Black Diamond special-purpose files are action-illustrated here. TECHNICAL BULLETINS on the design, features and application of these, as well as Shear-tooth, Lead Float, Aluminum Rasp, etc., are available through your mill-supply house or direct from us.



NICHOLSON FILES

FOR EVERY

CATALOGS

BULLETINS ON REQUEST BULLETINS

LITERATURE

water, oil, and other liquids in tanks, boiler drums, reservoirs, lakes, filter basins, etc., are covered in a bulletin issued by the Cochrane Corporation.

20-Motor Starter-A complete descriptive bulletin of the manual motor starters, featuring the automatic relatching mechanism, designed for starting, stopping and overload protection of single phase and polyphase motors up to 71/2 hp. is offered by the Colt's Patent Fire Arms Mfg. Co.

21-Fibre Trucks—A catalog on fibre hollow ware, issued by the Continental-Diamond Fibre Company, features their fibre trucks. These trucks are made to withstand hard usage and are used in factories, stores, warehouses and in all kinds of industries for transporting raw materials and finished products.

22-Steel -A folder on high speed steel is offered by the Crucible Steel Company of America. It possesses the best combination of maximum red hardness and toughness, resulting in continuous high cutting efficiency.

23-Sprockets—Complete information on sprockets and chains carried in stock, as well as engineering information and horsepower tables applicable to power transmission, is given in a catalog issued by Cullman Wheel Co.

24-Vacuum Cleaners—A bulletin on commercial vacuum cleaners issued by the Electric Vacuum Cleaner Company, covers a wide range of unusual applications. Also described are a large assortment of ingeniously designed tools which make vacuum cleaning a simple matter in otherwise hard-to-reach places.

25- Mechanic's Light - Repairmen, mechanics and technicians in every field will be interested in this new adapter. It is made of lucite which has the properties of transmitting cold light through a curved path, bending it around corners and spotlighting hardto-see places and locations difficult to reach. A circular issued by the Emeloid Company, Inc. gives full particulars.

26-Pumps-An illustrated and descriptive bulletin on angleflow pumps in both vertical and horizontal types has been released by Fairbanks, Morse & Company. These pumps are adaptable for many uses where large quantities of water are to be delivered at comparatively low and moderate heads.

27-Building Maintenance — Technical information for plant managers, purchasing agents, maintenance men and superintendents is covered in a handbook published by Flexrock Company. It shows how to do hundreds of odd jobs at lower cost with better results and presents many ideas that save valuable time and materials.

28- Aircraft Steel-A list of aircraft steels, stocked by Peter A. Frasse and Company, Inc. are now available. These include chrome moly and stainless steel sheets, alloy bars and tubing, rounds

29-Rubber Tired Wheels - All types of wheeled equipment are being improved with the application of rubber tires, either solid or pneumatic. Tires for various wheels used in industry are described and illustrated in a booklet issued by French & Hecht, Inc. Action photographs of typical uses in representative industries are included.

30-Reclosing Fuse Cutouts -Among the features claimed for the reclosing fuse cutouts by the General Electric Company are: automatic reclosing, maximum economy, sleet proof design, ease of co-ordination, and interchangeability. Cutaway photographs, dimensions, prices and data are included in their bulletin GEA-2707.

31-Gaskets-An informative handbook on industrial gaskets is offered by the Goetze Gasket & Packing Company, Inc. It contains advanced engineering data, shows many new and improved products and gives complete size and price information.

32- V-Belts-Alphabetical listings of belt requirements for electric refrigerators, washing machines, water pumps, pumps, stokers and oil burners, gasoline pumps, woodworking machines, air compressors, power lawn mowers, buffing machines, floor sanding machines, etc., are covered in a 170 page "V-Belt Data Book" issued by the B. F. Goodrich Company.

33-Plant Protection - Assured planned protection for your plant is described in a folder isued by the Graybar Electric Company, Inc. It is prepared to give you specialized aid in analyzing your needs for electrical means to keep intruders out.

34-Nails, Rivets, Pins-To help you lower your production costs, an informative catalog on special nails, rivets, escutcheon pins, drive screws and other special headed products, has been published by John Hassall, Inc.

35- Hydraulic Oils-Higher stability, flat viscosity curves are two of the advantages claimed by E. F. Houghton & Co. for their hydraulic oils. Their four page bulletin contains a viscositytemperature chart and explains the correct oils to use for the job.

36- Pens- Flanged edge pens for ruling, lettering and writing are described in a folder issued by the C. Howard Pen Company. These pens load by dipping and will handle a much larger supply of ink without blotting. Black or colored inks can be used without any special adjustment. They are easy to clean and come in eight sizes.

37- Materials Handling-An informative handbook on materials handling has been prepared by The Industrial Truck Statistical Association. It will serve as a practical guide for the analysis of material-handling operations and their correlation with production, storekeeping and related functions, and for planning and operation of industrialtruck materials-handling systems.

38-Building Men - Nearly 400 standard and semi-standard courses and an indefinite number of special combinations, or selective unit courses are taught by the International Correspondence Schools. An attractive booklet contains a summary of their instructional scope, methods of teaching, faculty heads, and action photographs of their various departments at work.

39-Tubing-A flexible tubing that is varnished inside-and-out is described in a folder issued by the Irvington Varnish & Insulator Company. It is suitable for applications involving high temperature baking, or continuous exposure to elevated temperatures, and for apparatus into which hot potting compounds are poured for sealing purposes.

40-Safety Filling Cans.—The advantages of safety filling cans for all purposes where gasoline or other flammable liquids must be poured from container into fuel tanks or other receptacles with minimum fire risks are explained in a folder issued by the Justrite Manufacturing Company.

41-Waterproofing & Dampproofing — Technical literature describing waterproofing and dampproofing of concrete and brick foundations, precast concrete piles or slabs, and for waterworks and sewage disposal plants, is published by Koppers Company. Membrane waterproofing-Form TB3, Dampproofing-Form TB-4, Waterproofing and dampproofing for waterworks-Form TB-5, Waterproofing and dampproofing sewage disposal plants-Form TB-2. Please give form number when requesting these copies.



CATALOGS

HOWAN BULLETINS ON REQUEST

42– Vibration Control—A summary of anti-vibration products and methods to assist you in selecting the proper general type of vibration control and the specific unit of the correct type best suited to your individual requirements is covered in a catalog issued by The Korfund Company, Inc.

43-Munition Threading Equipment—The various types of die heads and threading machines for munition threading operations are covered in a bulletin offered by the Landis Machine Co. They are especially designed for greater accuracy, maximum production and lower cost.

44–Welding — Procedures for producing all types of welds in mild steel, for welding all metals used to any extent industrially and for applying surfacing metal to meet any type of wear-action in service, are given in a bulletin published by The Lincoln Electric Company.

45–Power Transmission — A 32-page book on power transmission practice in paper mills has been published by the Link-Belt Company. It particularly covers applications of silent chain drives and P.I.V. gear variable speed transmissions to paper mill machinery, and contains numerous illustrations of typical installations.

46-Lift Trucks—Handling single or double faced pallets with lift trucks are covered in bulletin #117 issued by the Lyon Iron Works. These trucks are easier to operate and handle because of their hydraulic construction. They can be furnished for specifications to fit almost any size pallet.

47–Shop Equipment—A wide range of economical, durable and efficient steel shop equipment, such as: benches, cabinets, chairs, desks, lockers, toters etc., is described and illustrated in a catalog issued by Lyon Metal Products.

48-Cement Cleaner—An easy to use, quick working and safe to handle cement cleaner, product of Magnus Chemical Company, Inc., is described in an illustrated folder. It cleans and whitens the cement, hardens and fills the surface. Floors, driveways or runways cleaned with it become less porous.

49– Gift Merchandise — A handsome 396-page book published by L. & C. Mayers Company illustrates more than 6,000 articles suitable for Christmas gifts, as well as for year-round needs such as sales and sport prizes, awards for company activities and safety contests, presentations to officials and employees, etc.

50– Tool Chart—A tool room chart No. 6 on which has been printed an inch rule and a protractor for measuring tool dimensions and angles, has been issued by McKenna Metals Company.

51- Fluorescent Lighting—The advantages of "Masterlite" for general and localized industrial illumination is fully described and illustrated in a folder issued by The Miller Company. This fluorescent unit is completely wired and has a removable wire-free reflector which simplifies installation and maintenance.

52–Safety Belt Tail Line—The advantages of their steel safety belt tail line are covered in a bulletin issued by The Mine Safety Appliance Co. It consists of a light, flexible, aircraft-type steel cable—only 3/16 of an inch in diameter, yet tested to 3900 pounds and may quickly be attached to the D-ring of the worker's belt.

53–Wire Rope Clamp—The safe-Line wire rope clamp, product of the National Production Co., has no projecting bolts and nuts. Its perfectly streamlined contour gives a neat, shipshape appearance to rigging or control wires.

54-Electric Furnaces — Prepared as an aid in the design and construction of small laboratory furnaces suitable for relatively high temperatures a booklet offered by Norton Company contains information on the proper selection of refractory shapes and how to use them to advantage.

55–Asphalt Tile—Improved asphalt tile suitable for a wide variety of uses in many types of building construction is covered in a catalog issued by The Philip Carey Company. It is a hard and durable surfacing material, for floors and other areas, capable of withstanding heavy rolling and static loads.

56–Electric Tools—A folder issued by The Porter-Cable Machine Company covers the many advantages of their take-about electric sanders, speedmatic hand saws, speedmatic floor sanders, belt, disc and spindle sanders. They are economical and easy to operate.

57– Temperature Control — How to reduce steam wasted by over-heating spoilage and production delays with

automatic temperature control in connection with plating tanks, metal parts washers, quench and tempering baths, degreasers pickling vats, bonderizing

LITERATURE

tanks, dryers and ovens, is covered in a folder issued by The Powers Regulator Company.

58–V-Belt Drives—A handbook on V-belt drives issued by the Pyott Foundry and Machine Company enables drive users to select readily the cheapest of the many drive arrangements that will do a given job. Photographs of interesting, representative drive installations, belt and sheave price lists and engineering data are contained.

59- Variable Speed Control—Convert your constant speed motors into variable speed drives with the Vari-Speed Jr., described in a folder issued by the Reeves Pulley Company. It comes in six sizes, up to 1½ horsepower and is easily and quickly installed.

60-Stainless Steel—Enduro stainless steel, an alloy of iron with both chromium and nickel, is covered in a catalog issued by the Republic Steel Corporation. It is stronger than ordinary steel, making it well suited for special applications where high strength and high corrosion resistance are necessary.

61-Ladders — Numerous types of straight grained well seasoned western spruce ladders are fully covered in a booklet issued by The Rich Ladder & Manufacturing Company. They are easy to handle, give longer service and are especially made for safety.

62–Beryllium Copper— The heathardenable non-ferrous alloy in which many of the advantageous properties of steel and copper are combined is fully covered in a catalog issued by The Riverside Metal Company.

63–Toilet Installation — A brochure issued by The Sanymetal Products Company, Inc., presents illustrations in color, enabling architects, builders, and owners to choose the type of partition that will facilitate creating the proper environment for toilet rooms in almost any type of commercial, industrial, municipal, or school building.

64-Cranes — Single beam cranes manufactured by Shepard Niles Crane & Hoist Corp. are widely used where the conditions do not require, nor the clearances permit, the installation of an electric traveling crane of double beam construction. They facilitate the handling of all kinds of loads with precision, safety and at low operating cost.

65–Roller Bearings—Illustrations of roller bearing applications in mining, crushing, steel, paper, oil, railroads, and allied fields is covered in a catalog

FOR INCREASED PRODUCTION Keep Your Light Levels UP



WHEN the voltage of the lamp circuits in your plant drops off, your light drops off even more—in most cases nearly three times as much. That's why proper voltage control is vital if high light levels, and consequent high efficiencies, are to be maintained. And that's why G-E air-cooled automatic induction voltage regulators are finding increased use as reliable, low-cost aids to better lighting.

Their compact construction and light weight

make out-of-the-way installations easy. They can be installed indoors without costly fire-proof vaults. First cost is low—and maintenance is practically negligible.

Higher plant illumination with regulated voltage can pay big dividends in higher production. Call your G-E representative now. He'll be glad to help you select the proper regulators to keep light levels up. General Electric Company, Schenectady, N. Y.

Write for Bulletin GEA-3057



CATALOGS

Jours

BULLETINS

LITERATURE

N REQUEST

entitled "SKF Spherical Roller Bearings". Helpful information on bearing selection, timesaving computations, and drawings of various types of roller bearing design is given. S K F Indus-

66-Pulleys-A comprehensive bulletin on variable speed pulleys, manufactured by The Speedmaster Co., explains how stepless speed delivery may be obtained and illustrates practical user applications. It also offers engineering service in special problems pertaining to the attainment of variable speed.

67-Panelboards - How to install more circuits on rewiring jobs, for the accommodation of more lighting, air conditioning, modern electrical appliances and machinery with the use of multi-breaker panelboards is disclosed in a folder issued by the Square D Company,

68- Screws-Miscellaneous screw data is contained in a catalog issued by the Standard Pressed Steel Company, as well as photographs covering their complete line of screws for every purpose.

69-Purchase Order Routine— Economical and efficient purchase order routine is the subject of a loose-leaf book offered by The Standard Register Co. Typical basic forms and routines are shown which can be modified to meet your own problems and conditions.

70-Burlap Tubing — An illustrated folder describing their burlap tubing is offered by Stein, Hall & Company, Inc. This tubing enable you to speed packing operations, save time, money and mate-

71- Electric Tools-The line of electric tools and concrete vibrators manufactured by the Syntron Co., is covered in their catalog. Equipment in use on various jobs in diversified industries are shown, together with description of the proper type of tool to use.

72- Jacks-An illustrated catalog on jacks issued by Templeton, Kenly & Company, fully describes their con-struction and application. The more specialized jacks for various industries such as mining, oil, utilities, railroad aircraft, construction and marine are

73-Connectors-For the first time you can stock a line of pressure (solderless) connectors what will lug, tap and splice at least 90% of your requirements. The solution to solderless stocks and solderless problems with a line comprised of just 28 fittings to do a multitude of jobs is offered by the Thomas & Betts Company Inc.

74-Waterway Transportation -River shippers and those contemplat-ing the use of inland waterway transportation will find a convenient summary of information on the Allegheny, Monongahela, and the upper Ohio rivers in a booklet issued by the Union Barge Line Corporation. The height of spans and the size of dam locks together with nautical mileage charts are given.

75- Alloys-Descriptions and suggestions for uses of ferro-alloys and

metals are contained in a twenty-four page booklet issued by the Union Carbide and Carbon Corporation.

76- Revolving Bin-Keep items visible and instantly available with the revolving bin manufactured by Universal Fixture Corp. The bin will accommodate small tools and parts and speeds will speed up shop production. It saves 50% floor space.

77-White Paint-How to provide proper plant lighting at the lowest possible cost with the use of reflecting white paint is explained in a catalog issued by the U. S. Gutta Percha Paint Company. Actual photographs of "before and after" are included.

78-Tube Fitting-A safety tube fitting for all purposes and materials is described and illustrated in a catalog issued by The Weatherhead Company. It solves the mechanical problem of connecting tubing without the necessity of flaring, threading or soldering and can be easily disconnected and reconnected without danger of leakage

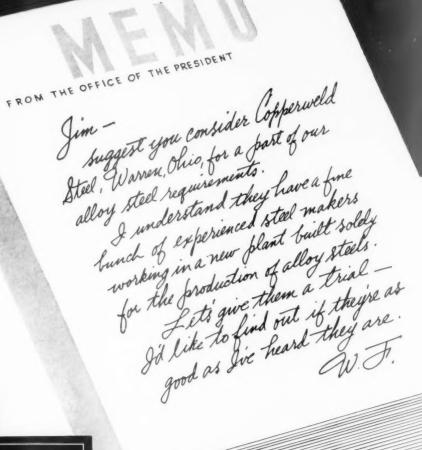
79-Fluorescent Luminaires - A booklet describing a twin lamp fluorescent RLM type luminaire, designed especially for general or supplementary lighting in low bay industrial areas, has been announced by the Westinghouse Electric and Manufacturing Company.

80-Wire Cloth—A manual of industrial wire cloth and woven wire screens has been published by the Wickwire Spencer Steel Company. It contains informative illustrations, charts, graphs, diagrams, and gives all the information necessary to make the most economical selection of wire cloth for a given assignment.

CHECK THE LITERATURE YOU WANT ON THIS COUPON OR POST CARD AND MAIL.

PURCHASING, 205 East 42nd Street, New York, N. Y. DECEMBER, 1940									
I	wish to receive the	catalogs che	ecked below.	It is my une	derstanding that	there will b	e no charge for	this service	ce.
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
NAMECOMPANY									
TIT	LE				ADDRESS				
CIT	Υ				STATE				

ARISTOLOY



When writing Copperweld Steel Company please mention Purchasing

S.A.E. ALLOY BILLETS AND BARS; OXIDATION AND CORROSION RESISTING STEELS; TOOL AND SPECIAL STEELS; AIRCRAFT QUALITY STEELS; STAINLESS STEELS

"...but don't go near the water!"



If one could be sure that corrugated containers would never be subjected to extreme humidity, the reasons for using starch as a binder would be less compelling. But since rain or dampness must always be reckoned with and since board made by The Stein-Hall Starch Combining Process has been proven* to possess a definite superiority in strength when exposed to varying humidities—then it behooves all desirous of making or using the best corrugated board to learn just how much better starch-combined board really is.

*For a report of impartial tests address any one of the companies named below.

CORN PRODUCTS REFINING CO. 17 Battery Place, New York City

> STEIN, HALL MFG. CO. 2841 S. Ashland Ave., Chicago

> > CLINTON COMPANY Clinton, Iowa

A. E. STALEY MFG. CO. Decatur, Illinois

THE STEIN-HALL PROCESS

PENICK & FORD, LTD., INC. 420 Lexington Ave., New York City

STEIN, HALL & CO., INC. 285 Madison Ave., New York City

THE HUBINGER CO. Keokuk, Iowa

NATIONAL STARCH PRODUCTS 820 Greenwich St., New York City

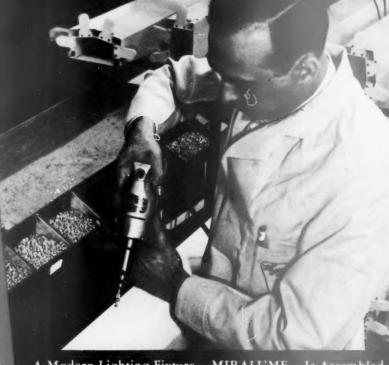
When writing The Stein-Hall Process please mention Purchasing

"American PLUS Phillips Screws

MOST ADEQUATELY
FULFILL OUR REQUIREMENTS

for both QUALITY AND MANUFACTURING FCONOMY"

MR. CHESTER F. HORNE General Manufacturing Manager Miralume Division Hygrade Sylvania Corporation



A Modern Lighting Fixture—MIRALUME—Is Assembled with Modern Fastening—AMERICAN PLUS PHILLIPS SCRE

Here's why Hygrade Sylvania Corporation selected American PLUS Phillips Screws for the new Fluorescent lighting fixtures, "Miralumes."

"Afterconsiderable experimentation to find the proper type screw to be used in Miralumes, we selected American PLUS Phillips Screws. They most adequately fulfilled our requirements for both quality and manufacturing economy, and measured up to Hygrade Sylvania standards so satisfactorily that we now use them exclusively, . . ."

A SAVING YOU, TOO, SHOULD MAKE!

This company — eager to market "Miralumes" at the lowest possible

price consistent with high quality is convinced that it costs less to use American PLUS Phillips Screws.

They — and other manufacturers offering America better products at lower prices — find American PLUS Phillips Screws save an average of 50% in assembly cost. Faster driving, fewer accidents, elimination of refinishing costs, less bit breakage and tighter assemblies — all result from the advantages of the patented recessed head developed by American Screw Company engineers.

The initial price is higher than oldfashioned slow-driving slotted screws, but the savings in assembly cost more than wipe out this difference. And assemblies are tighter, more attractive.



SPECIAL NOTE TO MANUFACTURERS WITH SMALL-VOLUME PRODUCTION...

On work where time saved in fastening would be negligible compared with other operations, many manufacturers use American PLUS Phillips Screws for these reasons:

- 1. More solid, permanent fastening
- 2. Freedom from screw-driver accidents
- 3. Less driving experience required
- 4. Increased sales appeal of finished product

OPEN UP THE ASSEMBLY BOTTLENECK...
SPEED PRODUCT DELIVERIES WITH

with the patented PAUL LIPS recessed head American Screw Co.

Wood Screws
Shoot Motal Screws

MAIL THIS TEAR-OUT CARD FOR FREE FASTENING CHECKLIST (YOU'LL DISCOVER WHERE AND HOW TO ELIMINATE THE "ASSEMBLY BOTTLENECK")

AMERICAN SCREW CO. 26 Stevens St., Providence, R. I.

Send me facts on how my industry benefits from American PLUS Phillips Screws.

Name.....

Company

Address

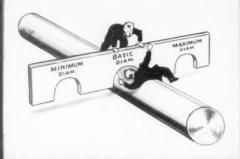
Industry

UNEQUALLED INSPECTION METHODS

Mean Better Quality from American Screw Company

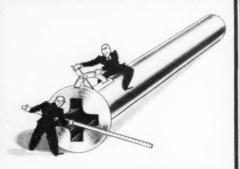
American Screw Company spends many thousands of dollars each year in inspection facilities in an endeavor to give you 144 perfect screws in every gross of Phillips or slotted screws.

WIRE DIAMETER IS ACCURATE



American Screw Company purchases its wire in rod form, does its own drawing. Diameter of drawn wire is regularly checked to a tolerance of plus or minus .001".

ACCURACY CHECKED AT HEADERS



THREADED SCREWS EXAMINED CAREFULLY



A cruising inspector checks samples for outside diameter, root diameter, length of thread, angle on point, sharpness of point.



By final conveyor belt inspection, each screw is studied for imperfections. This assures shipment of perfect screws... freedom from inconveniences in use.

Inspectors check every machine at intervals of five minutes or less. Recess of American PLUS Phillips Screws is coldforged to accurate tolerances to make snug fit with driver.

HERE ARE 2 METHODS OF INSPECTION ... WHICH DO YOU PREFER?

1 Sample inspection. A certain percentage of faulty screws are bound to get by. These faulty screws will cost somebody time and money later on.

2 Heads, threads and points of American PLUS Phillips and slotted screws are carefully checked. This is one of many important inspections that save you money.

Large orders filled promptly without impairing quality standards. 32,000 instock items — both Phillips and slotted — available for immediate shipment. Distributor stocks in all important cities.



FIRST CLASS PERMIT No. 745 (Sec. 510 P. L. & R.) PROVIDENCE, R.I.

BUSINESS REPLY CARD

2c POSTAGE WILL BE PAID BY—
AMERICAN SCREW CO.

North Station

PROVIDENCE, R. I.

"american Plus"

IN FRONT OF "PHILLIPS"
ON YOUR ORDERS

U. S. Patents on Product 2nd Methods Nos. 2,046,343; 2,046,837; 2,046,839; 2,046,840; 2,084,076; 2,084,079; 2,090,338. Other Domestic and Foreign Patents Allowed and Pending.

Chicago Office and warehouse: 219 W. Randolph St., Reading Screw Company, Norristown, Pa. (division of American Screw Co.); Detroit Office and warehouse: 1847 W. Bethune St., Pacific Coast Representative: Osgood & Howell, Los Angeles, Seattle, San Francisco.

AMERICAN SCREW COMPANY - PROVIDENCE, RHODE ISLAND



YOU can rely upon Scully to handle your orders promptly, accurately and cheerfully... whether large or small, regular or rush. So whenever you need steel or steel products, copper or brass, put it up to Scully and know that you'll get prompt action. Thousands of customers have learned that Scully Service is the same at each of our eight conveniently located warehouses. They all

LAND

operate on the principle that our customers want immediate service and friendly contacts — and they always hurry whether you ask it or not. And when you say "Rush" they know you mean it.

Why not try Scully Service? Phone, write or wire the warehouse nearest you. And ask for our complete and handy Stock List and Reference Book. It's free.

We have big stocks on hand NOW ... for immediate delivery

SCULLY STEEL PRODUCTS COMPANY

Distributors of Steel, Steel Products, Copper and Brass

Warehouses at CHICAGO · NEWARK, N. J. · ST. LOUIS · BOSTON
ST. PAUL-MINNEAPOLIS · CLEVELAND · PITTSBURGH · BALTIMORE



The Mark of Service

ALLOYS
ANGLES, HOT ROLLED and COLD
ROLLED
ARCHES (CORRUGATED)
BABBITT ARCHES (CORNUGATED)
BABBIT
BANDS AND HOOPS
BARS, HOT ROLLED
ALLOYS (HR and GF)
COLD FINISHED
ELECTRIC HIGH CARBON STEEL
REINFORCING
BEEMS AND G. B. SECTIONS
BEEF RAIL
BOLTS, NUTS, WASHERS, ALL KINDS
BORING and TURNING BARS and
GRINDERS
BRACES, BOILER
CHAIN, ALL KINDS
CHANNELS
CHISELS
CHISELS
CHISELS
CHISELS
CHANNELS
CHANNELS
CLIPS, PATTERSON
CLEAMERS, FLUE
CONDUCTOR PIPE
COPPER AND BRASS
COUPLINGS, HOSE
CRAYONS, SOAPSTONE
CUTTERS
DARDELET RIVET AND MACHINE BOLTS
DRILL RODS DANDELET RIVET and MACHINE BOLTS
DRILL RODS
EAVE TROUGH and FITTINGS
EXPEANDERS, FLUE
FERRULES, COPPER
FLANGES, BOLLER and TANK
FLOOR PLATES
GALVANIZED SHEETS, BARS, BANDS
HANDLES, HAMMER
HEADS, TANK and FLANGE
HOISTS, HAND and POWER
HRON, STAYBOLT
LUGS, BOILER, TANK and SILO
MACHINERY, HAND and POWER
MANHEAD PLATES and FITTINGS
NAILS DARDELET RIVET and MACHINE BOLTS NAILS
PACKING
PAINT STICKS
PLATE STEEL, STANDARD QUALITIES
ABRASION RESISTING
COM-TEN and MAN-TEN
PLUGS, FLUE
RAILS and FITTINGS
REAMERS
SHAFTING
SHEETS HAFTING
HEETS
ABHASION RESISTING
ELECTRICAL
CORTEN and MANTEN
HOT ROLLED and UNIFORM BLUE
WELLSVILLE POLISHED
COLD ROLLED
STAINLESS STEEL
GALVANIZED AND GALVANNEALED
LONG TERRE
CORNUGATED
US-S COPPER STEEL U-S-S COPPER STEEL PRING STEEL BARS and SHEETS TEES
TIRE, ROUND EDGE
TOOLS, HAND and POWER
for BOILER and IRON WORK
TROLLEPS
TUBES, BOILER
TURNBUCKLES
VALVES, BLOW-OFF
WELDING ROD and WELDERS
ZEES

The Mark of Quality



UNITED STATES STEEL

APEX

PHILLIPS HAND DRIVERS



Made in two types—General Purpose and Super Service. Super Service Drivers are for casehardened, self-tapping screws. Available for all sizes of Phillips screws, and in "Stubby" drivers for close quarters work. Both types and all sizes can be had with transparent break- and shock-proof handles.

"L" Drivers for Phillips screws are made for all sizes and in single and double-end drivers.

Service Drivers are available for assembly tee handles, extension shanks, speeder handles, ratchets, etc.

Hand Brace Bits are made for all sizes of Phillips screws with either Super or General Purpose blades.

All blades are accurately finished to fit the head of the Phillips screw. One-hand operation is simplified without the hazard of slips to gouge the work—and production is increased.

The
APEX MACHINE
& TOOL COMPANY
Dayton, Ohio

PERSONALITIES in the NEWS

J. W. Hagerty has been appointed Assistant Purchasing Agent of the Pennsylvania Railroad System, with head-quarters in Chicago. He has been associated with the railroad since 1901, and for the past twenty years has been in the purchasing department at Pittsburgh and Philadelphia.

Kirke W. Comstock has been named Purchasing Agent of the Gale Mfg. Co., Albion, Mich., succeeding Edward R. Reed, who becomes supervisor of scheduling in the production department. In addition to his purchasing duties, Mr. Comstock is secretary-treasurer of the company.

Herbert A. Ricks has been appointed Purchasing Agent of the Charity Hospital. New Orleans.

Merritt A. Cline, Purchasing Agent of the Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has been elected president of the Yonkers Kiwanis Club.

John K. Conant, Purchasing Agent for the General Printing Ink Co., addressed a recent convention of the sales and technical advisers of the Titanium Pigment Co. in New York City on "Sales and Salesmanship as the P. A. Sees Them."

A. J. Orsi, Purchasing Agent of the Eclipse Aviation Division of Bendix Aviation Corp., Bendix, N. J., has been transferred to Philadelphia in charge of purchases for the company's new Philadelphia Division, which has taken over the former Atwater-Kent radio plant. Russell Anderson succeeds Mr. Orsi at Bendix; he was formerly Purchasing Agent for the Wallace & Tiernan Co., Newark, N. J., where he is now succeeded by Everett U. Irish.

Harold K. LaRowe, Purchasing Agent for the Dairymen's League Cooperative Assn., New York, addressed the October meeting of the Fireside Club of Yonkers, N. Y., on the Purchasing Agent's function in the modern industrial organization.

Joseph F. Drennan, City Purchasing Agent at Springfield, Mass., addressed the fifth annual conference on current governmental problems, held at Massachusetts State College, Amherst, November 16th. His topic was "Centralized Purchasing." Lee Costigan, Purchasing Agent of the Hampden Paint Co., who, as a Springfield alderman, was largely responsible for the passage of the city's purchasing ordinance, served as chairman of the discussion

group. The conference was attended by more than 450 public officials from eight states.

George K. Straus has been appointed Purchasing Agent and Director of Maintenance and Supplies for the University of Tampa, Florida. He is a graduate of Stetson University, and has been connected with the Tampa institution for the past four years as business manager of the Athletic Association.

C. D. Payne has been appointed Purchasing Agent of the Fresno, Cal., office of the Surplus Marketing Administration, succeeding Donald E. Wilcox, who has been transferred to Sacramento. Mr. Payne has been with the organization for the past three years.

James Breen has been appointed Director of Purchases for the Aviation Manufacturing Corp., Nashville, Tenn. He was formerly Purchasing Agent for the Truscon Steel Co.

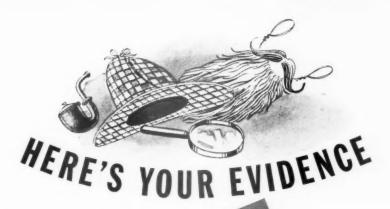
A. M. Poulton has been appointed Purchasing Agent for The Enterprise Mfg. Co., Columbiana, Ohio. He was formerly with the Humphreys Mfg. Co., Mansfield, Ohio.

F. H. Harrison has been appointed Purchasing Agent for the Province of British Columbia, Dominion of Canada, operating in the finance department. He was formerly business executive of the Public Works Department of the Province.

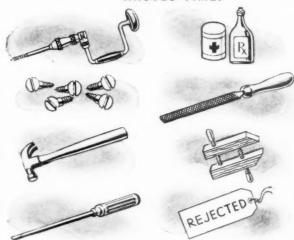
Verne Gehringer, San Diego County (Cal.) Purchasing Agent, has been elected President of the Pacific Beach Chamber of Commerce for 1940-1941.

Joseph F. Franks, Purchasing Agent of the Wm. D. Gibson Spring Co., Chicago, is listed on the company's honor roll for 15 to 20 years service, in the program of the "First Annual Banquet of the Gibson Old Timers," held last month. A hundred and twenty-five employees have service records of ten years or more with this 71-year-old organization, including three men with more than half a century of service.

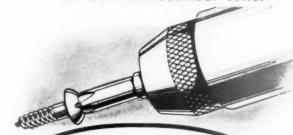
James P. Lynah, formerly Director of Purchases for the General Motors Corp., and now associated with the Production Division of the National Defense Advisory Commission, addressed the Manufacturers' Association of Connecticut at Hartford, October 31st, on "Government Specifications."



DRIVING OLD-FASHIONED SCREWS WASTES TIME.



Twice as many hands are needed with old-fashioned screw driving as with PHILLIPS RECESSED HEAD SCREW shown at right. PHILLIPS SCREWS SAVE AN AVERAGE OF 50% IN ASSEMBLY TIME.



Every item pictured left represents unnecessarily wasted time - hours which can be saved using Phillips Screws.

Phillips Screws shorten hours spent in screw driving, and speed delivery of your products by eliminating:

need for drilling pilot holes need for a helper to steady the work slow driving with hand drivers crooked screws or split heads accidents caused by slipping drivers delays caused by broken drivers refinishing screw driver scars



The Phillips Screw clings to the driver, permitting one-hand driving while the other hand holds the work. The recess prevents the driver from slipping, so it's safe to use a faster driving method. Fewer screws (or smaller, lower-cost sizes) can be used because the Phillips Screw provides greater holding power.

The reason you see Phillips Screws on most makes of cars, aircraft, electrical appliances, furniture, etc. - is that those manufacturers have proved it costs less - in time and money - to use Phillips Screws. Don't let slow-poke fastening cause an unnecessary jam of unfilled orders. Get in touch with one of the firms listed below.

RECESSED HEAD SCREWS

MACHINE SCREWS SHEET METAL SCREWS WOOD SCREWS

U. S. Patents on Product and Methods Nos. 2,046,343; 2,046,837; 2,046,839; 2,046,840; 2,082,085; 2,084,078; 2,084,079; 2,090,338. Other Domestic and Foreign Patents Allowed and Pending.

American Screw Co., Licenser, Providence, R.I. Continental Screw Co., New Bedford, Mass, Corbin Screw Corporation, New Britain, Conn.

The Lamson & Sessions Co., Cleveland, Ohio National Screw & Mfg. Co., Cleveland, Ohio Parker-Kalon Corporation, New York, N. Y.

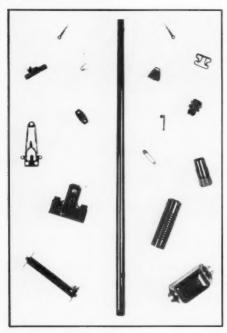
Pheell Manufacturing Company, Chicago, Illinols Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y., Scowill Manufacturing Co., Waterbury, Com. Shakeproof Lock Washer Co., Chicago, Ill.

BLACK

Better black finish -at far LOWER cost!

If you blacken anything, from a gun barrel to a hairpin . . . and if working time is money in your plant . . . here's how you can save up to 66¢ on the dollar in blackening costs—and get a richer, better finish in the bargain!

DU-LITE, the new low-temperature black bath, has been on the market only two years, yet it already has been adopted by 95% of the gun manufacturers in America! DU-LITE produces a rich, deep black that will not rub off. On polished surfaces, it leaves a permanent, glossy finish of great beauty. Note the gun barrel in the unretouched illustration.



Here are a few examples of the many small parts now being blackened by DU-LITE. This photograph is entirely without retouching.

Minutes Instead of Hours

Blacking processes that used to take two to three hours are completed with DU-LITE in less than fifteen minutes. Figure that against a rush schedule and a stepped-up payroll!

Foolproof in Use

DU-LITE is as simple to use as dipping a part in a pail of water. Operating temperatures are not critical. The bath does not weaken from use; it remains constant. The only loss is by drag-out on

Low Temperature Does Not Affect Heat-Treated Parts

DU-LITE operates between 290° and 300° with such a short hold in the bath that it has no effect on heat-treated parts. It does not draw, harden or embrittle. It leaves no film or scale on threads; residue rinses off freely in cold water.

Let Us Process Samples Free

Send for literature describing the DU-LITE process, and at the same time send us some samples to process as a demonstration at no cost to you. Our consulting staff will gladly work with you on any out-of-the-ordinary blackening problems.

THE DU-LITE CHEMICAL CORPORATION

12 Highland Ave.

Middletown, Connecticut

AVING been guilty of some few typographical slips on our own account over the past several years, we are doubtless vulnerable and should not take it too much to heart when we happen to be on the receiving end of a linotyper's error. Nevertheless it came as a mild shock when the Tulsa Tribune of October 30th referred to F.O.B., and presumably to our business address, by calling us a "New Porker." At least we hope that's the explanation.

The "RUSH" label on requisitions is losing any special force and significance which it might have enjoyed in more normal times. Yet the idea has to be put across somehow. Ben Van Voorhis of Dupont's Arlington, N. J., plant reports a recent requisition bearing the notation, "FRANTIC."

ORDINARILY we can get pret-ty enthusiastic when another municipality is added to the growing list of those where centralized purchasing is in effect. But an item in the Scioto Gazette of Chillicothe, Ohio, October 29th, leaves us The Chillicothe councilmen passed an ordinance permitting the Mayor to appoint a Purchasing Agent for the city. Two of the conditions set forth in this ordinance with which we take issue, are that the appointee's term expires with that of the Mayor, and that the Purchasing Agent shall serve without compensation. The latter provision is especially vicious, constituting an invitation to buying and selling practices which conscientious purchasing men have worked many years to outlaw-a project which has been generally successful and altogether to the credit of the buying fraternity. It has been amply proved that centralized purchasing will more than pay its way, on a reasonable salary basis. There is also plenty of evidence in the files of past experience that a system opening the war for "perquisites"

instead of forthright remuneration is a most expensive arrangement. We should have preferred, in this instance, to see the councilmen turn down the proposal.

Maybe it's a trend. The National Defense Commission, charged with the expenditure of sixteen billions of public funds, operates on a "dollar-a-year" basis. But that seems to us an altogether different situation.

EACE on Earth" is an ironic phrase in this year of 1940, yet never has that age-old greeting been breathed with more heartfelt fervor and longing. Though as a nation we are feverishly engaged in producing the materials of war, let us not forget for a moment that our objective is the preservation of the ideals for which America stands, and the ultimate achievement of a lasting peace. The National Defense program is not an end in itself. For the time being, it justly demands every bit of skill and every ounce of energy which we can summon to the common cause. Yet it is merely superimposed, briefly we hope, upon a peaceful economy and industry that represent the real America we are striving to save. The distinguishing characteristic of purchasing men should be a sound sense of values. At this Holiday season, as we express our sincere appreciation of the friendships and cooperation which it has been our privilege to enjoy over the past year, it is our wish that such a sense of values will return to this troubled world.

Another top-notch buyer who served his business apprenticeship very thoroughly and successfully in the sales department, up to the time when one of his good customers invited him to come in and take over the purchasing of-fice recently remarked, "The only difference between buving and selling is that when you're selling you go out and call upon your customer, and when you're buying you invite your supplier to come and call' on you.

WHEN is an emergency? J. Howard Henderson, writing a series of feature articles in the Louisville (Ky.) Courier-Journal, points out that the State Purchasing Department issued 7,650 regular purchase orders last year, turning in a competent and creditable record on this portion of their buying program. But in the same period there were 11,267 emergency orders issued, merely confirming purchases independently made by various governmental agencies without prior notice to the department concerning the need or the price to be paid. The ratio is rather startling. Chief offenders are the university and normal schools, then, in slightly lesser degree, the hospitals. One of the more flagrant disclosures was the unearthing of approximately \$20,000 of open accounts, some two years old, at the Negro school in Frankfort. establishment of a centralized purchasing system, whether in government or in business, is a matter of educating the using departments. and of enlisting the forceful backing of management. Inasmuch as the Kentucky Division of Purchases has been in operation since 1924, it would seem to have fallen down on both counts. We are inclined to agree with Mr. Henderson that the time for excessive consideration and diplomacy has long since expired, and that Governor Johnson, beginning right now, could make the Purchase Division a highly effective unit in three months.

"Salesmen Built America" is the title of a volume selected by the Dartnell Editorial Board as the "1940 gift book for salesmen." They made us what we are today. In all sincerity we proffer our orchid, too, to the aggressive, intelligent and optimistic ambassadors of trade. But we are constrained to include in that gesture the management which had the confidence to send them on their mission, the designers and production men who gave them goods to sell, and the purchasing men who made an intelligent selection from their varied wares and who maintained basic standards of value as they signed the dotted line.

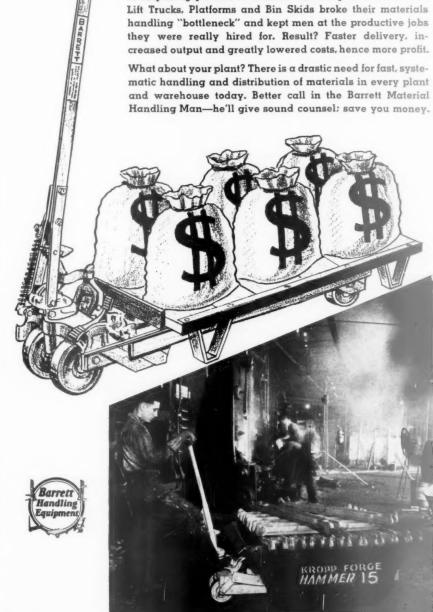
They Found a Mint in Their Own Plant!

It was a happy day for a large forge shop when the Barrett Material Handling Man happened along to check up on their material handling equipment requirements.

This firm was "tops" on forging, heat-treating, machining and wherever production was concerned, but they were in a tangle on materials handling. They had the best hammers and machine tools money can buy, the best hammersmiths and machinists to man them, but it was found that skilled labor was doing much of the "carrying"

> and what materials handling equipment they had was unsuitable, nullifying much of their productivity.

> A surprisingly small investment in wisely selected Barrett Lift Trucks, Platforms and Bin Skids broke their materials handling "bottleneck" and kept men at the productive jobs they were really hired for. Result? Faster delivery, increased output and greatly lowered costs, hence more profit.



BARRETT-CRAVENS COMPANY

3280 W. 30th Street, Chicago, Illinois Branch Offices and Representatives in 70 Key Cities

When writing Barrett-Cravens Company please mention Purchasing

These 2 NEW STEELS



This parts manufacturer wanted a steel which provided high machinability and which could be successfully cyanide-hardened with a resulting tough core. He tried UNION MULTICUT, using tough core. He tried union hexagon bar. He found that it would a 3/8-inch hexagon bar. He found that it would cut at the same speeds and feeds which he had cut at the same speeds and feeds which he had been using for high-sulphur Bessemer steel. Its response to cyaniding was uniformly excellent. As a result, this manufacturer is adopting union a result, this manufacturer is adopting union a result, this manufacturer is adopting union multiparts production.

... BY THEIR FINE MACHINED FINISH



This manufacturer now uses UNION MAX-CUT for this part which formerly was made of high-sulphur Bessemer with lead. He uses the same speeds and feeds, obtains the same production efficiency and produces a part with a finish so fine that it is suitable for chrome plating. It is interesting to note that the form tool makes a cut 1.125 inches long and reduces the part from 1/2-inch round to .300 inch. From the drawing inset in the photograph, it will be noticed that the form tool also partially cuts off the piece. This manufacturer is well pleased with the uniformity of fine surface finish provided by UNION MAXCUT.

UNION MAXCUT

A new, uniform, fast-cutting Bessemer steel — with physical properties comparable to S. A. E. X-1112. It combines unexcelled machinability with soundness and uniformity to be found in no other high-speed Bessemer screw steel. Parts show a smooth, fine finish when machined at 280 surface feet per

minute with a basic feed of .0095" and an average tool life of more than 11 hours. The use of lighter feeds, of course, permits much higher cutting speeds. Union Maxcut's response to cyaniding and other case-hardening treatments is similar to that of S. A. E. X-1112.







This part formerly was made from high-sulphur Bessemer with lead. Now it is made from 15/16-inch square UNION MAXCUT machined on a four-per minute with a very heavy cut on the box tool operation. The 7/16-inch hole is drilled on the auto-operations. Tool life is better than 8 hours—but tools the unvarying high speed machinability of UNION MAXCUT and plans to use it for other parts.

Less than six months ago, Union Drawn combined modern chemistry and a new manufacturing process to produce two new free-machining bar steels—UNION MAXCUT (a faster-than-ever-cutting Bessemer steel) and UNION MULTICUT (an open-hearth steel that machines as well as the best high-sulphur Bessemer heretofore produced.)

e

g

g

ld

ad

re-

As

NC

for

H

X-

ade

ses

me

rith

me

rm

ces

ch.

, it

illy

vell

ish

ng

These were the steels with the qualities demanded by industry — highest speed machinability *UNVARYING* in bar after bar and shipment after shipment — soundness — and freedom from elements which cause difficulty in heat treating or excessive tool wear.

But before introducing these steels, Union Drawn cut up tons of each on an automatic screw machine under conditions closely approximating those which obtain in actual production, heat-treated sample parts and gave them thorough laboratory tests to make certain that they were right. Now, additional tons cut into various parts under actual shop conditions in plants of every type definitely prove that here are two steels which can and do materially and UNIFORMLY aid in increasing production, cutting costs, improving product quality or all three.

Are these the results you seek? Then why not order a trial lot of UNION MAXCUT or MULTICUT? Shop practices, equipment and parts design may vary—but these steeks never vary. Regardless of your specific requirements, they can help you in some way—and a Union Drawn Field Service Man will be glad to assist you in obtaining maximum results. Union Drawn Steel Division, Republic Steel Corporation, Massillon, Ohio.

UNION MULTICUT

A new, uniform, fast-cutting open-hearth steel — with physical properties similar to S. A. E. 1115. It is unusually sound and uniform in structure, and its machining qualities are superior to those of any other open-hearth screw steel. Parts show a fine finish comparable to Bessemer screw stock when machined at 275 surface feet per minute with a basic feed of .0087" and an average

tool life better than 8 hours. With lighter feeds this steel can be run up to 350 surface feet per minute with satisfactory results. Union Multicut can be carburized and hardened to a minimum case hardness of C-60 Rockwell with either single or double quench. It produces a very tough, ductile core in small case-hardened parts with a minimum of distortion in quenching.

ADD" via Graybar TO YOUR NEXT REQUISITION

LOW-MAINTENANCE FHP MOTORS Whether for plant use or



on equipment for resale, General Electric fractional horsepower motors meet every demand for dependable performance and low-maintenance cost. " " Large overload capacity is provided for peak loads. Bearings are large and require only occasional oiling. The newest type of insulation - resistant to moisture, oil and mild acids and alkalis - is used. » » » Available in sizes and types to meet your precise requirements as to mounting, starting torque, speed, and the like. Just ask GRAYBAR.

NEW MAGNETIC MOTOR STARTER

This new, Size O magnetic starter for motors up to 2 h.p. is as small as many manual starters. Yet it includes (1) push button, (2) isothermal overload protection, and (3) undervoltage protection-all the advantages of a larger

Write GRAYBAR for bulletin GEA-3250 for details.



For G-E Quality . . . Plus GraybaR Service

When your order reads "via GRAYBAR" you get a double assurance of good value on motors and motor control: (1) GRAYBAR representatives and specialists have service to you as their primary responsibility - they're ready to assist you in picking the right motor for the job, in meeting application problems, and in "following through" on prompt delivery and full satisfaction. (2) GRAYBAR offers the complete line of General Electric Motors and Motor Control Equipment - backed by G. E. manufacturing and research facilities - the line which GRAYBAR experience has proved of greatest service to its customers. » » What's more, GRAYBAR has sound lines of wiring devices and other accessory items you need to get full value from your powersupply equipment. One call, or a single purchase order, brings "everything electrical" you need all backed by the satisfaction insurance of the GRAYBAR Tag. Make it a point to see that "via GRAYBAR" goes on the next requisition? Write GRAYBAR for information on the motors or controllers that will best fit your needs.



"We're buying motors through GRAYBAR because of the help they gave us in choosing a drive for a new line of machines."

says Plant Manager R. (No. 11 in a series of 10-second "quotes" from typical Graybar customers.)



GraybaR

HEADQUARTERS for FLUORESCENT

OFFICES IN 82 PRINCIPAL CITIES EXECUTIVE OFFICES: GRAYBAR BUILDING, NEW YORK, N. Y.